Subjects and Agents: II*

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PREFACE

This article is the text of my dissertation, Subjects and Agents. It is a revision of an earlier paper, also titled "Subjects and Agents," which appeared in Working Papers in Linguistics No. 3. Except for parts of the present Chapters Seven, Eight, and Eleven, the two versions have little material in common. For one thing, in line with an increasingly pessimistic attitude toward formalism, I have deleted most trees, rules, and references to rule orderings.

The two syntacticians on whose work I depend most directly are Barbara Hall Partee and Charles Fillmore. I am defending a proposal of Partee's dissertation (1965)--that in underlying structure, subjects are optional. A suitable reformulation of this proposal in terms of the notion 'agent' presupposes Fillmore's theory of case grammar.

For helpful criticisms of both versions of this paper, I am most indebted to Charles Fillmore, my advisor. (This is not to say that he agrees with me.) I am also very grateful to Gaberell Drachman, David Stampe, Arnold Zwicky, and my wife Pat for many suggestions--substantive and stylistic.

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TABLE OF CONTENTS

CHAPTER ONE

INTRODUCTION

The hypothesis of this study is that in English, agents are just deep subjects. If a noun phrase is the agent of a sentence, then it is the subject of that sentence in underlying structure. Non-agent superficial subjects are secondary; they are introduced into subject position by transformation. An immediate implication of this is that, since some sentences are agentless, there will be underlying sentences with no subjects.

Before I outline the arguments to be presented, the terms 'deep subject' and 'agent' require some discussion. The first of these, 'deep subject,' is to be interpreted within the framework of the transformational-generative theory of syntax. In all versions of this theory, sentences are assigned underlying, or deep structures which undergo a step-wise conversion into superficial (observed) structures. I assume that underlying structures, like superficial structures, are ordered from left to right and consist of sentences, and that underlying sentences look sufficiently like superficial sentences for the term ' deep subject' to be understood in a fashion parallel to 'superficial subject.' In particular, I assume that a deep subject of a sentence will also be the sentence's superficial subject unless moved or deleted by a transformation. These assumptions lead fairly naturally

to the following property of deep subjects: a subject of an underlying sentence is a noun phrase which is the initial element of the sentence, and hence precedes other sentence elements such as the verb, direct object, and indirect object. There are problems with the notion 'superficial subject,' (see the discussion in Hall, 1965), and certainly one could define 'deep subject' so that the preceding would not necessarily be a property of deep subjects; nevertheless, the ordering relation is what my arguments will be directed toward. Put in another way, then, the hypothesis is that the agent of a sentence is a noun phrase which is the initial element of the sentence in underlying structure, but that non-agent noun phrases do not occupy this position.

The term 'agent' is drawn from Charles Fillmore's case theory of syntax (see Fillmore, 1966, 1967, 1968, 1969, 1970). This dissertation is an essay in case grammar in that I assume a syntactic description to be incomplete unless it specifies certain relational information about noun phrases. Terms like 'agent', 'instrument', 'experiencer', and 'object' are descriptive of this information, and I use these terms with approximately the sense Fillmore gives them. For reference I quote a set of definitions from Fillmore's "Lexical Entries for Verbs" (1969, p. 77):

> Agent, the instigator of the event.
> Counter-Agent, the force or resistance against which the action is carried out.
> Object, the entity that moves or changes or whose position or existence is in consideration.

Result, the entity that comes into existence as a result of the action.
Instrument, the stimulus or immediate physical cause of an event.
Source, the place to which something is directed.
Experiencer, the entity which receives or accepts or experiences or undergoes the effect of an action (earlier called by me 'Dative').

Earlier, in "The Case for Case" (1968, p. 24), Fillmore defined the agentive case as "the case of the typically animate perceived instigator of the action identified by the verb." Such definitions of agent are intended to characterize the subjects of sentences like 1.1 - 1.4 as agents.

1.1. Harry assassinated the Premier.

1.2. George hugged Elaine.

1.3. John frightened the baby cleverly.

1.4. Mary commanded George to sit down.

The subjects of 1.5 - 1.8, on the other hand, are not agents.

1.5. Harry has long hair.

1.6. Mary contains nothing but sugar and spice.

1.7. Buffalo is in New York.

1.8. Harry thinks that the earth is flat.

In the following two chapters (Two and Three), I will approach the definition of agent through a consideration of the syntactic phenomena that the notion agent is required to describe. The notional definition which appears to me to accord most fully with a coherent set of syntactic properties is the following: an agent of a sentence is any noun phrase whose referent is not presupposed not to have a purpose with respect to the condition or event described by the sentence.

In other words, a non-agent is presupposed not to have a purpose.

The view of agents taken in Chapter Three depends on a particular analysis of pairs of sentences like 1.9 - 1.10.

1.9. John broke the window.

1.10. The window broke.

The appropriate analysis is one in which the difference between 1.9 and 1.10 is characterized in underlying structure just by the presence or absence of the agent John. In the absence of an agent, the window becomes the superficial subject, giving 1.10. This analysis is proposed by Barbara Hall Partee in her 1965 dissertation, and it is elaborated by Fillmore in Fillmore (1966, 1967, 1968). But Partee also mentions another, causative analysis, which she argues against. In the causative analysis, 1.9 is given a complex underlying syntactic structure which corresponds to the superficial sentence 'John caused the window to break' (see Lakoff, 1965). If the causative analysis were correct, the notion agent (viewed syntactically as in Chapter Two) would break down. The difference between 1.9 and 1.10 would no longer be characterizable just by the presence or absence of the agent John. To uphold my claim, I must argue for Partee's position on the question and against the causative analysis. This I do in Chapter Nine.

Aside from being clear about the terms of the hypothesis, it must be shown that the hypothesis is consistent with what is known about English syntax. Or, at least, if there is an inconsistency it must be resolved somehow. With regard to past analyses of particular constructions, there seems to be no problem of consistency. According

to widely accepted analyses, the subjects of predicates like seem, grow to are introduced into subject position by transformations; these secondary subjects are never agents. Similarly, passive subjects and secondary subjects of be easy, be hard, etc. are non-agents. On the other hand, many subjects that are commonly regarded as deep subjects are not agents (e.g., subjects of believe, be strong, realize). I have no concrete suggestion as to the source of such non-agent subjects, but it is at least the case that no positive arguments have been made that they are not secondary.

There are two theories, however, according to which all subjects are secondary. In Chapter Four I argue that insofar as non-agents are concerned, these theories are correct, but that the evidence that has been given does not show agents to be secondary.

Now let me outline the five arguments to be given for the hypothesis that agents are just deep subjects. These arguments are all based on constraints and are of the following form: there is a constraint which in certain circumstances has the effect of requiring (excluding) a subject. In the same circumstances, an agent is required (excluded). Consequently, at the level or levels of derivation where the constraint applies, agents and no other noun phrases must be subjects. Since we can trace derivations back to a level at which agents are the only subjects, there is a prima facie case for agents being the only deep subjects.

The first two constraints discussed are the predicate-raising constraint (Chapter Five) and the like-subject requirement (Chapter

Six). Predicate-raising amalgamates the verb of a lower sentence with the verb of a higher sentence; the predicate-raising constraint requires the verbs to be contiguous before this can occur. The effect is to exclude a subject in the lower sentence. Given the hypothesis, the predicate-raising constraint accounts for why there are no objects in superficial structure which are agents.

The like-subject requirement is imposed on the subject of a lower sentence; the subject must be identical to a noun phrase in the embedding sentence. This has the effect of requiring the lower sentence to have a subject. It turns out that when the like-subject requirement applies pre-cyclically, the agreeing subject must be an agent.

The last three constraints confirm the hypothesis only in a restricted domain--that of predicates which may occur in indirect causative constructions (defined in Chapter Nine). The manner-adverb exclusion constraint applies in a way that shows that non-agent subjects of indirect causatives are from manner adverbs, but that agents are not from manner adverbs (Chapter Eight). The adverb-referral constraint shows that non-agent subjects of indirect causatives are from lower clauses, but that agents are not from lower clauses (Chapter Ten). The crossover constraint shows that the non-agent subjects originate to the right of objects and various other noun phrases in the verb phrase, but that agents come from the left of these noun phrases (Chapter Eleven).

By way of conclusion, in Chapter Twelve, I will look briefly at some semantic properties of agents and view the prospects for arriving at syntactic reconstructions of these properties.

CHAPTER TWO

AGENTIVENESS

In this chapter and the following one, I attempt to come to grips with the notion of agent. For the most part, I have cast this attempt in the form of an inductive definition. I do not want this form to be misleading, so I will state at the outset that the steps in the definition are sufficiently vague to preclude the notion of agent from emerging in a very well-defined way. The reason for this "pseudo-induction" is that it makes clear the range of factual data that support the theoretical term 'agent'. The point is to show the necessity for talking about agents in describing certain syntactic phenomena.

This chapter proposes a definition of a sentence property called agentiveness, which is taken to be a property of underlying structures.

There is a certain class of sentence contexts, which we may call 'pro-agentive' contexts, in which some sentences may appear but others must not. It makes sense to group these contexts together under the single label 'pro-agentive', since by-and-large they accept the same set of sentences and reject the same set. Or at least in cases where a sentence is accepted in one context but rejected in another, this is a peculiarity which one may hope has an independent account. Examples of pro-agentive contexts along with instances of sentences

they accept and reject are:

I.A. The sentence is the object complement of command, or the infinitival object complement of persuade.

2.1. John commanded Mary to leave.

2.2. *John commanded Mary to have red hair.

I.B. The sentence is the object complement of having.

2.3. John was having everyone leave.

2.4. *John was having everyone be tall.

I.C. An instrument phrase is added to the sentence.

2.5. John opened the door with some instrument.

2.6. *John was tall with some instrument.

I.D. Cleverly, avidly, enthusiastically or on purpose is added to the sentence.

2.7. John opened the door cleverly.

2.8. *John was tall cleverly.

I.E. In order to...is added to the sentence.

2.9. John opened the door in order to amaze his grandfather.

2.10. *John was tall in order to amaze his grandfather.

I.F. A nominalization of the sentence occurs with by in a higher sentence which is in a pro-agentive context.

2.11. John cleverly frightened the baby by opening the door.

2.12. *John cleverly frightened the baby by being tall.

These pro-agentive contexts are compatible, for the most part. That is, a sentence may occur in several of the contexts simultaneously.

There are, on the other hand, anti-agentive contexts which accept

sentences rejected by pro-agentive contexts but reject some sentences accepted by pro-agentive contexts. Examples are:

II.A. The sentence is the complement of such intransitive verbs as strike as, prove to, turn out to (except in the sense of 'turn out in order to'), grow to. In these cases the subject of the complement becomes the main subject by subject-raising, while the verb phrase comes after the main verb.

2.13. John strikes me as being tall.

2.14. *John, strikes me as assassinating the Premier.

II.B. The sentence is the object complement of prove or believe.

2.15. They proved John to have red hair.

2.16. *They proved John to assassinate the Premier.

II.C. The sentence is in the aorist present, and no special interpretation as a title, headline, or primer English is required.

2.17. John has red hair.

2.18. John eats the fish. (not aorist, but rather habitual or repeated action.)

II.D. If the sentence is active, its subject is inanimate.

II.E. The sentence is in the perfect (have+en) or the progressive (be+ing).

I realize that it is odd to call C, D, and E "contexts"; the word is being extended to include things internal to sentences by analogy to the way in which 'environment' in phonological rules is extended to include features of a segment that is changed by the rule. The contexts I am talking about can be regarded as tests for whether a sentence is agentive.

Pro-agentive and anti-agentive contexts divide sentences in three classes, according to whether the sentences are accepted in one or both sets of contexts. Accordingly we will call a sentence 'agentive' (accepted in pro-agentive contexts, but rejected in anti-agentive contexts), 'non-agentive' (accepted in anti-agentive contexts, but rejected in pro-agentive contexts), or 'neutral' (accepted in both sorts of contexts). Examples follow.

Agentive:

2.19. John assassinated the Premier.

2.20. Mary ate twenty macaroons.

2.21. John commanded someone to leave.

Non-agentive:

2.22. John has red hair.

2.23. Mary seems sick.

2.24. George decayed.

Neutral:

2.25. John frightened the baby.

2.26. Harry proved something.

2.27. The Russian spy broke the window.

In turn, verbs can be classified as to whether the sentences in which they are the main verb must be agentive (the verb is 'pro-agentive' non-agentive (the verb is 'anti-agentive'), or may be agentive, non-agentive, or neutral (the verb is 'neutral'). The main verbs of the above three sorts of sentences will serve as examples.

I propose that there is a sentence property of agentiveness which accounts for these contextual restrictions. Agentive sentences have this property and non-agentive sentences do not. Neutral sentences may either have the property or lack it; that is, neutral sentences are ambiguous. Let us look at two questions that could be raised in objection to such a scheme.

Is it possible to ascribe the pro- and anti-agentive restriction to the presence or absence of just one property of sentences? If there are not broad classes of sentences which are rejected in both pro-agentive and anti-agentive contexts, it would be reasonable to suppose that there was only one property involved. But sentences with instrumental subjects (e.g., 'The hammer broke the window') are rejected in both contexts, so this is a good objection. I choose to take the pro-agentive contexts as central in the definition of agentiveness; a sentence is non-agentive if it is rejected in a pro-agentive context. Anti-agentive contexts must require some properties which are incompatible with agentiveness.

The second question is whether it is fair to describe neutral sentences as ambiguous. The first point to be made is that such sentences are felt to be ambiguous; 'John frightened the baby' is non-agentive if it is understood that it was something about John that frightened the baby, but is agentive if he did it on purpose. It may require some imagination to get a non-agentive reading in the instances where the human subject must be thought of as an instrument, as in 'The Russian broke the window.' This example is from Barbara Hall

Partee's dissertation (Hall, 1965, p. 31), and the situation is that James Bond hurls the Russian, who has nothing to say about it.

Another point, a more "syntactic" one, is that no neutral sentence (nor any other sentence) can occur in a pro-agentive and an anti-agentive context simultaneously. Thus 2.28 and 2.29 are unacceptable.

2.28. *John turned out to frighten the baby cleverly.

2.29. *They believed John to prove it in order to be elected.

This is expected, given the ambiguity of neutral sentences, since a property cannot be demanded and excluded at the same time. If it were the case that the property of agentiveness was irrelevant in the case of neutral sentences, or that neutral sentences were simply vague with respect to an agentive or non-agentive interpretation, then the incompatibility of pro- and anti-agentive contexts would be peculiar and would require a special account. Of course the unacceptability of sentences like 2.28 and 2.29 does not in itself show that we are dealing with an ambiguity and not just vagueness.

Since the contextual restrictions being discussed have to do primarily with the presence or absence of the sentence property of agentiveness, the pro- and anti-agentive contexts can be looked upon as tests for whether or not a sentence is agentive. In some cases, of course, one may only test a given reading of a sentence, or, to put it another way, one tests for whether agentiveness can be imposed on a sentence. This procedure assumes that it is fair to identify a sentence in the context with at least one reading of the sentence in isolation or in a different context. The choice of the main verb of a sentence

may be thought of as a context (a pro-agentive verb requires an agentive sentence), but this is difficult to use as a test--when the main verb of a sentence is changed, the whole structure of the sentence is generally changed.

In this regard, it should be pointed out that the pro-agentive contexts listed above are really of two sorts. external and internal. The external ones are relevant for active sentences only, whereas the internal ones are good whether or not the passive transformation has applied. 'The oatmeal was eaten by George' is rejected in context I.A. and I.F. (cf. 2.30 and 2.31 below) but is shown to be agentive by being accepted in other pro-agentive contexts (2.32) and rejected in anti-agentive contexts (2.33).

2.30. *Harry persuaded the oatmeal to be eaten by George.

2.31. *John cleverly frightened the baby by the oatmeal's being eaten by George.

2.32. The oatmeal was cleverly eaten by George.

2.33. *The oatmeal struck me as being eaten by George.

Context I.B. is "internal" in this sense, because it is insensitive to the passive transformation.

2.34. Harry was having George eat the oatmeal.

2.35. Harry was having the oatmeal eaten by George.

Naturally some contexts are neither pro-agentive nor anti-agentive, but are neutral with respect to agentiveness (neutral verbs such as frighten have already been mentioned). Among neutral contexts are some of those discussed by George Lakoff in his article "Stative

Adjectives and Verbs in English" (1966). Several of the pro-agentive contexts previously listed are drawn from Lakoff's article. Lakoff claimed that such contexts required that a sentence's main verb or adjective be non-stative. Stative verbs are not allowed in such contexts. My immediate concern is to show that the property agentive is distinct from the property non-stative, if the term non-stative is applied to sentences, or that the classifications pro-agentive and non-stative refer to different sets of verbs.

To take the second matter first, note that there are many verbs which appear in the progressive or with manner adverbs (which in some instances may be subcategorized with respect to the subject of the sentence), which are nonetheless anti-agentive. A list of such verbs is given in 2.36.

2.36.

come to	glimmer	worry (not in the sense 'harass')
grow to	incandesce	give a tendency to
turn out to	shimmer	fall into a trance
manage to	blister	
	glitter	
rain	blossom	
hail	dawn	
snow	fester	
cloud up	feel sick	
	loom	

2.37 and 2.38 are instances of the co-occurrence with manner adverbs and the progressive.

2.37. John was rapidly proving to be the best student.

2.38. The mountains were looming greyly in the distance.

Stative verbs (such as seem, contain, be engrossed in) cannot occur in the progressive or with manner adverbs, and so the verbs in 2.36 are non-stative. It is clear, then, that Lakoff's non-stative contexts fall

into two distinct sets with regard to verb classification. Some, the pro-agentive contexts, reject anti-agentive main verbs, but others, contexts neutral with regard to agentivity, allow anti-agentive main verbs. It may well be, however, that stative verbs are always anti-agentive.

When one considers sentences, the matter is even clearer, since active sentences with inanimate subjects are non-agentive, but it is easy to find instances of such sentences in the progressive or with manner adverbs ('The hammer was breaking the window'). Moreover, the addition of the progressive be+ing does not disambiguate sentences like 'John frightened the baby', 'John was frightening the baby' may be agentive or non-agentive.

The term 'agent', to be introduced in the following chapter, depends on the notion agentivity. What I hope to have shown so far is that the agentivity of a sentence must be known in order to describe properly a number of syntactic restrictions.

CHAPTER THREE

AGENTS

The purpose of this chapter is to show that the sentence property agentiveness can profitably be attributed to the appearance of a particular noun phrase in the sentence, namely the 'agent.' A sentence is agentive if it has an agent; otherwise the sentence is non-agentive.

In trying to be specific about what makes an agentive sentence agentive, it makes sense to look first at sentence internal elements whose choice may determine whether a sentence is agentive. Although there are many logical possibilities, the main verb and the subject are basic elements of the sentence and can both be anti-agentive. Choosing an anti-agentive verb makes a sentence non-agentive, and choosing an inanimate subject does the same (in the case of a passive, I am speaking of the original subject). So a plausible initial assumption is that the determinant of agentiveness is something about the verb or the subject or, perhaps, both. Here I shall argue that the crucial factor is something about the subject. The reasoning is just a restatement of a line of argument followed by Fillmore in several articles on case grammar.

A sentence element is said to be optional if its presence or absence makes no crucial difference in the way the rest of the sentence is understood. For instance, in 3.1 and 3.2 yesterday is optional.

3.1. John left.

3.2. John left yesterday.

There are various ways of stating the relationship of 3.1 and 3.2. One could say that 3.1 says no more than 3.2, or that 3.2 says what 3.1 says (and more), or that the roles that John and left play are the same in 3.1 and 3.2 (to put it in Fillmorean terms), or that yesterday supplies additional information. But it hardly needs illustration that a sentence element is not optional in this sense in all cases where two sentences differ merely by the presence or absence of the element. Compare 3.3 with 3.4 and 3.5 with 3.6.

3.3. They watch the magazines.

3.4. Watch the magazines.

3.5. John kicked his left foot against the wall.

3.6. John kicked his left foot.

The straightforward relationship of 3.1 and 3.2 should be reflected in the underlying structures of these sentences; the parts of the structures that give rise to John left should be the same.

There are many instances where the noun phrase that is important in determining the agentiveness of a sentence is optional. Compare 3.7 and 3.8.

3.7. The window broke.

3.8. John broke the window.

John here is optional with respect to 3.7 and 3.8 in the same sense as yesterday is optional with respect to 3.1 and 3.2; 3.8 says what 3.7 says and more. The importance of agentive optionality is the fact

that the sentence is agentive if and only if the crucial noun phrase (here, John) is present. The crucial noun phrase that is the determinant of agentiveness is the 'agent'.

Partee's examples, which I give as 3.9 and 3.10, show that the position and lexical content of a noun phrase do not infallibly determine whether it is an agent.

3.9. The Russian broke the window.

3.10. James Bond broke the window with the Russian (by hurling him through it). (Hall, 1965, p. 31)

3.9 can be interpreted agentively, but in this case its meaning is not included in that of 3.10. Thus it is the appearance of a noun phrase with a certain function (that of agent) which determines agentiveness.

One further point to be made here is that an agent is a noun phrase, and not just the specification of a noun phrase. Compare 3.11 and 3.12.

3.11. Someone broke the window.

3.12. John broke the window.

John could be thought of as optional, since 3.12 says what 3.11 says and more. But the optionality consists in the specification of the subject noun phrase, and there is thus no difference in agentiveness between 3.11 and 3.12.

Both 3.13 and 3.14 are agentive, and so to maintain the connection between agentiveness and the presence of an agent, we must say that in the derivation of 3.13 an agent has been deleted. That is, 3.13 is from 3.15.

3.13. The window was broken on purpose.

3.14. John broke the window on purpose.

3.15. The window was broken by someone on purpose.

From tracing agentiveness back to the appearance of an optional noun phrase, the agent, it seems natural to proceed to attribute agentiveness to the presence of an agent in other cases, too. An agentive sentence like 3.16, we can say, has an agent, even though there is no obvious corresponding agentless sentence. That is, in 3.16 the agent is not optional, but obligatory.

3.16. John assassinated the Premier.

By a similar extension, a non-agentive sentence lacks an agent, whether or not the agent is optional.

If an agent is optional, then in its absence some other noun phrase must fill in for it, since the sentence must be supplied with a subject. There are many particularities and peculiar restrictions involved in determining what noun phrase may fill in for a missing agent; nevertheless a few generalizations may be made. These are:

A. The noun phrase that fills in may have been a constituent of the verb phrase, or part of such a constituent.

B. If the fill-in is part of a constituent, it is possible for the fill-in to be represented twice in the non-agentive sentence--once in subject position and once in its original position.

C. There may be several noun phrases that can be chosen to fill in for a missing agent, giving rise to multiple paraphrases.

D. If the fill-in is a genitive, there is a presupposition of attachment or a part-to-whole relationship between the referent of the

genitive and the referent of the noun phrase it modifies.

E. In case the noun phrase that fills in is animate, the sentence may be functionally ambiguous as between an agentive and a non-agentive interpretation.

F. Non-agentives with fill-in subjects are often rejected in anti-agentive as well as pro-agentive contexts.

To illustrate A - F, consider first the paradigm of sentences 3.17 - 3.20.

3.17. John hit the window with the tip of the business end of the hammer.

3.18. The tip of the business end of the hammer hit the window.

3.19. The business end of the hammer hit the window with {its tip. / the tip.}

3.20. The hammer hit the window with the tip of {its business end. / the business end.}

3.17 is the agentive member of the paradigm. In 3.18, the fill-in is the whole instrument phrase; with is deleted. 3.19 and 3.20 have subjects derived from parts of the instrument phrase, these parts being optionally represented in their original positions by pronouns. 3.18 - 3.20 are paraphrases.

As Cantrall points out in his dissertation (Cantrall, 1969), it is possible to fill in with the genitive part of an instrumental in a case like 3.21 only if it is presupposed that the fender is attached to the car at the time of the action.

3.21. The car's left front fender hit the building.

3.22. The car hit the building with its left front fender.

If the fender flew off of the car and then hit the building, 3.21 would be appropriate, but not 3.22.

The ambiguity between instrument and agent was illustrated by Partee's example about the Russian (3.9).

3.17 - 3.20 are rejected in most of the anti-agentive contexts listed in Chapter Two. E.g.,

3.23. The hammer hits the window. (not an aorist present)

3.24. *The hammer proved to hit the window.

Although 3.24 is unacceptable, a sentence with an instrumental subject may sometimes be a complement to prove to if the sentence expresses repeated action or a law or generalization. However in this respect, such sentences are not different from sentences with agents.

As Fillmore notes in "The Grammar of Hitting and Breaking" (1967), surface contact verbs typically give paradigms like 3.17 - 3.20. In that article he also points out that change-of-state verbs may have subjects derived from direct objects as well as from instruments. A genitive within a direct object may be chosen as secondary subject only if it is animate; consequently for sentences with such derivations there are always corresponding agentives with the same superficial form.

3.25. John broke his leg. (agentive)

3.26. John's leg broke.

3.27. John broke his leg. (non-agentive)

The presupposition of attachment holds in 3.27 just as the previous

example 3.22. Thus, in 3.28, where attachment is most unlikely, there is only an agentive reading.

3.28. John broke his mother's leg.

This presupposition along with the restriction to animate genitives makes it impossible to have multiple paraphrases by various choices of a genitive to fill in the subject position. Moreover, we do not get agentive/non-agentive ambiguities other than those of the type 3.25 - 3.27 where a genitive fills in, because when the whole object fills in there is no longer a superficial object. But agentive sentences with change-of-state verbs must have superficial objects. Thus 3.29 is unambiguously non-agentive.

3.29. George melted in the heat.

Sentences with the verb stop provide paradigms similar to those just considered.

3.30. John stopped Mary's decaying.

3.31. Mary's decaying stopped.

3.32. Mary stopped decaying.

3.30 is the agentive member. In 3.31 the secondary subject is from the sentential object of stop, while in 3.32 only part of the sentential object fills in, namely the genitive that comes from the subject of the nominalized sentence. Apparently a subjective genitive is the only part of the object that can be made into a subject. In my own variety of English, the subjective genitive cannot become the subject of stop and be represented in its original position as well. Sentences like 3.33 are about as odd as sentences in which an inanimate genitive

from the object of a change-of-state verb has been made subject--like 3.34.

3.33. ?Mary stopped her decaying.

3.34. ?The picture broke its frame.

Given the restriction to fill-ins from subjective genitives the only way multiple paraphrases could arise in sentences with stop is by taking a genitive coming from a sentence subject of a nominalization which was itself the subject of stop's sentential object. That is, the genitive would have to come from two or more sentences down the tree. Apparently this does not occur.

There is an agentive/non-agentive ambiguity in the stop paradigm: 3.35 displays this.

3.35. John stopped running across the pavement.

The agentive sense here is obvious. The non-agentive interpretation is the gory one, in which 3.35 is interpreted in a fashion parallel to 3.36.

3.36. The paint stopped running across the pavement.

The non-agentive sense of 3.35 arises in the way already discussed. The agentive sense is from a derivation in which the subject of stop's sentential object is an agent, and is identical to the agent subject of stop. In this circumstance, the subject of the lower sentence is deleted under identity, resulting in a surface string identical with that of the non-agentive derivation.

There are several peculiarities with ston. 3.37 has a meaning similar to that of 3.30, except that it could be used when Mary had

not yet begun to decay, unlike 3.30.

3.37. John stopped Mary from decaying.

3.38 is similar to 3.35 in the agentive sense, except 3.38 presupposes that John (agent) had been running across the pavement repeatedly.

3.38. John stopped his running across the pavement.

The verb begin, discussed by Perlmutter in his dissertation (1968), is similar to stop (and start), except that it is a "like-subject" verb. That is, if begin has an agent subject, then this subject and the subject of its sentential object must be identical. Compare 3.39 - 3.43 with 3.30 - 3.32, 3.35, 3.38.

3.39. *John began Mary's decaying. (violates the like-subject requirement)

3.40. Mary's decaying began. (the sentential object has become the subject)

3.41. Mary began decaying. (part of the object has become the subject)

3.42. John began running across the pavement. (ambiguous)

3.43. John began his running across the pavement. (he ran repeatedly)

Perlmutter argues that begin may take either one or two complements in underlying structure--either a sentential complement or a simple noun phrase and a sentential complement. If in the cases in which begin is shown to have two underlying complements, the begin sentences are agentive, then Perlmutter's arguments substantiate my contention that begin takes an optional agent. It seems to me that these cases do indeed require agentive begin sentences. Foremost among Perlmutter's arguments is one that proceeds from the like-subject constraint, discussion

of which I defer until later (Chapter Six).

The last case of optional agents to be considered here is that of have-sentences (cf. Lee, 1967). Compare 3.44 - 3.48 with the previous paradigms.

3.44. John had a dent in the lower corner of the right front fender of Mary's car.

3.45. Mary had a dent in the lower corner of the right front fender of her car.

3.46. Mary's car had a dent in the lower corner of {its / the} right front fender.

3.47. The right front fender of Mary's car had a dent in {its / the} lower corner.

3.48. The lower corner of the right front fender of Mary's car had a dent (in it).

3.44 is agentive. 3.45 is ambiguous, but in its non-agentive sense is a paraphrase of 3.46 - 3.48. The presupposition of attachment is of significance in 3.46, which would not be appropriate if the fender had been removed. However, as the non-agentive interpretation of 3.45 shows, the presupposition is not necessary in the case of animate genitives. But even here the presupposition is important, because if it does not hold, the animate genitive must be represented in its original position. So 3.49 and 3.50 are paraphrases, but 3.51 must be agentive.

3.49. Mary had a scratch on her arm. (non-agentive)

3.50. Mary had a scratch on the arm. (non-agentive)

3.51. Mary had a dent in the car.

The topic of optional agents will be taken up again in Chapter Eight.

The general line of reasoning in this chapter has been that a certain noun phrase is optional and that its presence or absence goes along with agentiveness or the lack of it; consequently it is fair to refer the property of agentiveness to this noun phrase.

A sentence is agentive if and only if it has an agent.

CHAPTER FOUR

DEEP SUBJECTS

There is a prima facie case for agents being deep subjects. If a sentence has an agent, then either the agent is the surface subject of the sentence or it has been removed from subject position by a transformation. The agent can be removed by various deletion transformations, or by passive or subject-raising ('John is likely to kill himself'). Thus unless one can successfully challenge the customary formulation of these transformations as affecting subjects, one must find that agents always come from subjects. Since we assume that underlying structure is like surface structure unless there is evidence to the contrary, we can suppose that all agents are deep subjects until faced with such evidence.

But it has been argued recently by Fillmore and McCawley that there are no deep subjects. If this is so, agents obviously cannot be deep subjects. In this chapter I will try to show that Fillmore's and McCawley's arguments, far from showing what they purport to show, for the most part actually confirm my own conclusion that only agents are deep subjects.

One of Fillmore's arguments (condensed to such an extent that it loses much of its force) goes like this (see Fillmore, 1966 and 1968, p. 17 ff.). There are roles, or deep cases, of noun phrases that are

of semantic and syntactic significance (agent, instrument, experiencer, etc.). Hence these roles should be represented in underlying structures. At least it should be true that if two noun phrases play different roles, they should start out looking different. If the surface subjects which are commonly supposed also to be deep subjects were really deep subjects, the requirement of different representations for different roles would not be met. This is because surface subjects may have a number of different roles. Consequently subjecthood cannot be a category of underlying structure, since it has no unique semantic significance.

I agree completely with Fillmore's assumptions and reasoning as far as the last sentence. My proposal of course is that subjecthood does have a unique semantic significance, namely that of agent. Given the correctness of the argument save for the conclusion that there are no deep subjects, it follows that if agents can be shown to be deep subjects, then noun phrases in roles other than that of agent must not be deep subjects.

The second Fillmorean argument (although he does not actually give it as an argument) is one that I draw from his analysis of passives (see Fillmore, 1968, p. 37 ff.). Consider the paradigms that were discussed in Chapter Three, such as 4.1 and 4.2.

4.1. John hit the window with the hammer.

4.2. The hammer hit the window.

The hammer plays the same role in 4.1 and 4.2, and so we would like to say that this noun phrase starts out in the same position in the

derivation of 4.2 as it does in the derivation of 4.1. Fillmore's proposal is that, in the absence of an agent in 4.2, the instrument is moved to the front. We see a comparable situation in the paradigm 4.3 - 4.4.

4.3. The fish was eaten by John.

4.4. John ate the fish.

John plays the same role in both sentences; we know that noun phrases can be moved into subject position (and prepositions eliminated) from analyzing situations involving optional agents; consequently in 4.4 John must be a secondary subject created by moving a by-phrase to the front.

The reasoning here, although obviously not probative, is plausible, at least at first sight. There are, I think, two good reasons for dis-believing the conclusion that agents are secondary subjects. The first is that nothing is gained in this reanalysis of the passive by way of giving a unique representation to a role. The usual formulation of the passive as affecting a subject will give John the same position in the underlying structures of 4.3 and 4.4, since 4.3 and 4.4 will have the same underlying structure. Furthermore, the reasoning of the preceding argument that subjecthood is not a deep category would show that the passive by-phrase is not a deep category, either. The term 'agent-phrase' often applied to the passive by-phrase is a misnomer, since the by-phrase need not be an agent. Consider 4.5 - 4.10 where the noun phrase after by expresses various roles.

4.5. Mary was believed by John to be pregnant. (experiencer)

4.6. The thief was seen by John. (experiencer)

4.7. Ohio is bounded by Lake Erie on the north. (location)

4.8. Mary was annoyed by John's eating the fish. (object?)

4.9. The window was broken by the hammer. (instrument)

4.10. The letter was received by John. (patient?)

Notice the contrast with the optional agent examples, where one must refer to the role of the noun phrase to determine whether it can be made into a subject. The correspondence between subjects and passive by-phrases seems to be independent of semantic role.

The second point has to do with Fillmore's special rule that tells what preposition is to be used with an instrument (see Fillmore, 1968, p. 32). Compare 4.11 and 4.12.

4.11. The window was broken with the hammer.

4.12. The window was broken by the hammer.

Fillmore claims that an agent is notionally present in 4.11, but not in 4.12 (see Fillmore, 1966, p. 22; and also Hall, 1965, pp. 25-26). I agree with this observation (notice that on purpose can be added to 4.11 but not to 4.12). He then gives the following rule: if there is an agent present, the instrumental preposition is with, otherwise it is by. With the usual formulation of the passive transformation, the proviso that the preposition is by if there is no agent is unnecessary. The by is supplied by the passive transformation. The absence of an agent is predicted from the absence of an agent in 4.13, which in turn follows from the fact that an instrument becomes subject only in the absence of an agent.

4.13. The hammer broke the window.

Moreover, Fillmore's treatment of the passive would complicate many of the rules that determine what preposition is to be used with a given role, as 4.5 - 4.10 demonstrate.

There is another argument that agents are not deep subjects that is not so easy to deal with. Fillmore maintains that there is a 'subject-choice hierarchy' which determines what noun phrases may be made into subjects. For example, if a sentence has both an instrument and an object, the instrument becomes the subject (in the absence of any special mark on the verb); but if the sentence has only an object, this becomes the subject. Looking at matters in this way, one would say that the prima facie case for agents being deep subjects, spoken of at the beginning of this chapter, is merely a special instance of the subject-choice hierarchy--an agent is the first choice for a subject. But this reasoning is again only plausible. It could well be that there is a subject-choice hierarchy in which agents do not participate. I would prefer to look at it in the following way: if there is a subject-choice hierarchy, one would like to account for it on independent grounds. Showing that agents are deep subjects is a first step in providing an independent account.

Let us now take up McCawley's arguments (from his paper "English as a VSO Language", 1970). McCawley does not actually argue that there are no underlying subjects; rather he wants to show that in underlying structure (and throughout the cycle) verbs precede their subjects. However, if the term 'subject' when applied to underlying structures,

is taken to mean what it does when applied to surface structures, then McCawley's underlying structures must be said to have no subjects. For example, McCawley would derive 4.14 from 4.15 (or rather a structure equivalent to 4.15 with respect to the matters under discussion).

4.14. Max kissed Sheila.

4.15. $_{S}$[kiss Max Sheila]$_{S}$

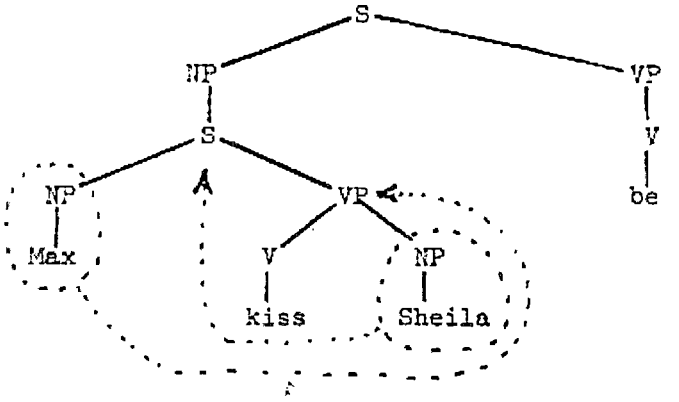
I take a subject to be a noun phrase that comes before the verb and is in construction with the verb plus the other constituents of the sentence (the verb phrase). In 4.15, although Max is to become a subject, Max is not a subject in the ordinary sense.

McCawley gives seven arguments that the verb comes first in a sentence. In deciding the significance of these arguments for the hypothesis that agents are the only deep subjects, it is important to realize that under the hypothesis verbs will come first in their sentences unless there is an agent. I believe that McCawley's arguments are irrelevant for deciding between the two views that there are no deep subjects and that the only deep subjects are agents.

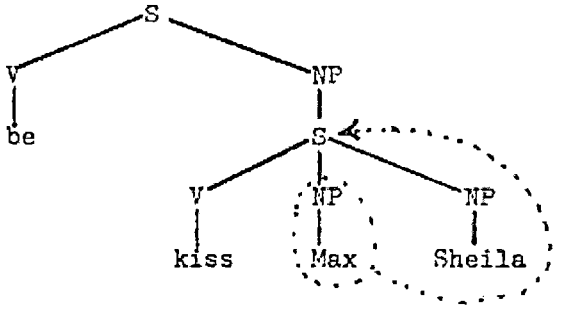
The first argument is that the passive transformation can be simplified to perform just one operation if verbs are first. An assumption, which I do not really believe but will accept for the moment, is that the passive be is not added by transformation but is present in the underlying structures of passives. I reproduce two of McCawley's diagrams as 4.16 and 4.17; these give two underlying structures for 'Sheila was kissed by Max,' and indicate by dotted

lines what the passive transformation does.

4.16.



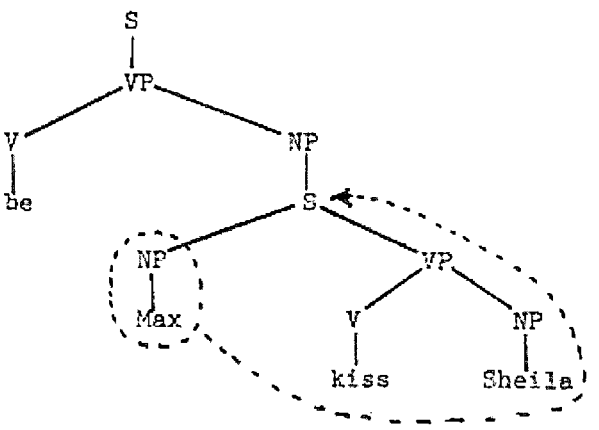
4.17.



4.16 assumes that verbs are always second, while 4.17 assumes that verbs are first. Under the first assumption, the passive transformation must perform two operations, but under the second accumption it need perform only one. Hence putting verbs first simplifies the passive. (In 4.17, Sheila would later become the derived subject by McCawley's 'V-NP inversion' transformation, which would be required also in non-passive derivations.)

Now under the hypothesis that agents are the only deep subjects, one can have an analysis in which passive involves only one operation. 4.18 indicates how this might be done.

4.18.



Consequently McCawley's argument does not show that "even agents" are not deep subjects. I emphasize that I do not believe 4.18 to represent a good analysis of passives, but would point out this analysis is no worse than that represented in 4.17.

McCawley's second argument is that the statement of there-insertion is simplified if verbs are first in their sentences. The there of sentences like 4.19 is supplied by there-insertion.

4.19. There is a unicorn in the garden.

However, there-insertion cannot apply to sentences with agents:

4.20. *There were some men broke the window.

4.21. *There was a boy careful to do it right.

So there-insertion can be simplified equally well if agents are subjects at the time at which it applies; representing agents as deep subjects may even help to account for the non-applicability in cases like 4.20 - 4.21.

The third, fourth and fifth arguments concern three transformations that transfer material from embedded sentences to the embedding

sentences. These transformations are subject-raising, negative-raising and predicate-raising. The point is that the source sentence can be either a sentential subject or a sentential object (accepting the superficial evidence that all sentences start with subjects) so that "to formulate any of these three transformations would require great ingenuity in the manipulation of symbols, since either the thing being extracted from the embedded sentence would have to move to the right when extracted from a subject complement and to the left when extracted from an object complement (this is the case with negative-raising and predicate-raising), or it would be moved over different things depending on whether it is extracted from a subject complement or an object-complement." (p. 296). We get around these awkwardnesses very nicely, though, if the sentence complements start out to the right of the verb regardless of whether they are destined to become subjects or objects.

These three arguments are most persuasive in themselves, but of course they don't show that agents come at the right of the verb, since sentential complements are never agents.

The last two arguments are about the placement of only and even (when they apply to whole sentences) and conjunctions. If only, even and conjunctions are considered to be verbs, their correct position is predicted under the verb-first hypothesis. I refer to McCawley's article for details. The point I wish to make here is that even if one does consider these items to be verbs, it is difficult to imagine that they could take agents. Again, then, there is no evidence that

agents are ever to the right of their verbs.

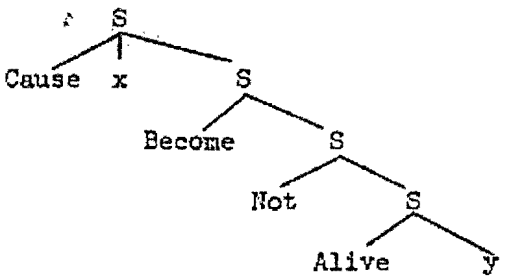
If they are correct, McCawley's arguments show that in certain cases superficial non-agent subjects are not deep subjects. This confirms my own view that only agents are deep subjects. There is a further confirmation in the fact that, so far as I know, there are no arguments along the lines of McCawley's to show that agents must come after their verbs.

CHAPTER FIVE

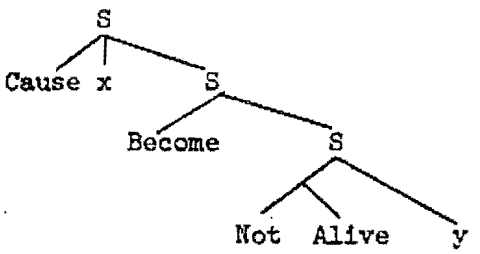
PREDICATE-RAISING

Consider McCawley's proposed derivation of sentences with the verb kill (McCawley, 1970, p. 295):

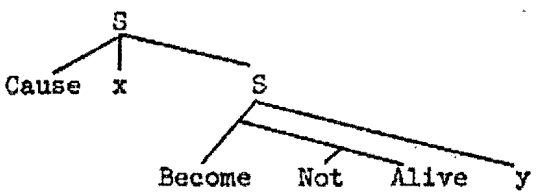
→ 5.1.



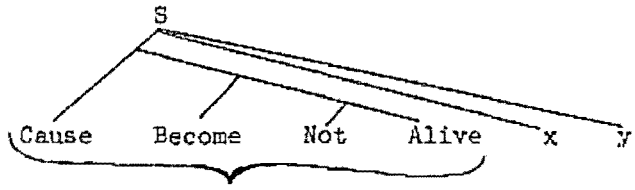
→ 5.2.



→ 5.3.



→ 5.4.



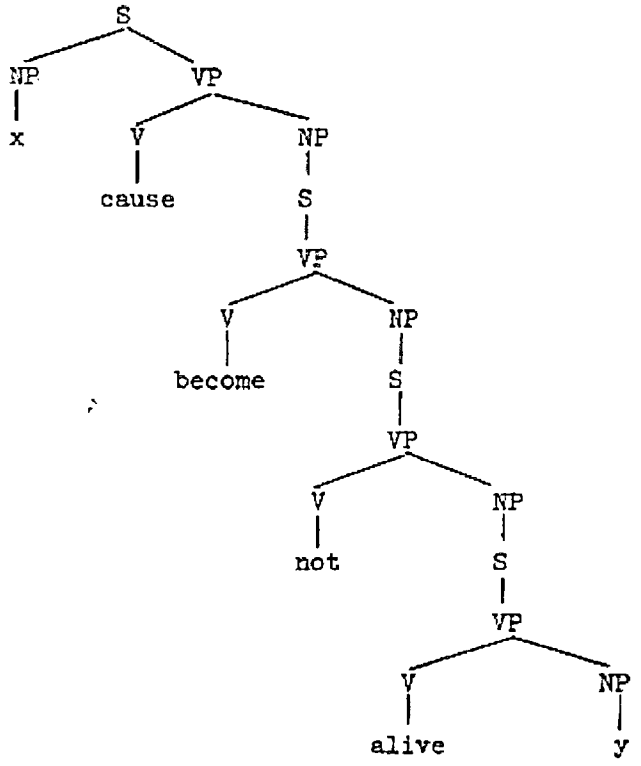
kill

The underlying structure is 5.1. Successive applications of predicate-raising convert 5.1 to 5.2, 5.2 to 5.3, and 5.3 to 5.4. Predicate-raising is thus the amalgamation of a verb in a complement with the verb of the embedding sentence. The transformation applies before the insertion of lexical items; the further change, Cause-Become-Not-Alive → kill, is indicated in 5.4. I will argue in Chapter Nine that not all sentences with causative verbs have derivations like this and that kill does not have a complex source. Let us assume for the time being, however, that McCawley's theory is essentially correct, and that kill and other causative verbs come from Cause (an abstract predicate with some properties of the word cause) plus some lower verbs. Predicate-raising will then play a part in the derivation of sentences with causative verbs other than cause or its synonyms.

Notice first that in the derivation 5.1 - 5.4 there are no elements intervening between the verbs that are amalgamated by predicate-raising except for the last application (5.3 - 5.4). Consider then how we would modify the underlying structure 5.1 under the hypothesis that agents are deep subjects. Assuming that 'x' represents an agent and making slightly different assumptions about the appearance of underlying structures, we arrive at 5.5. In 5.5 there are no elements intervening between any two of the verbs that are to be amalgamated

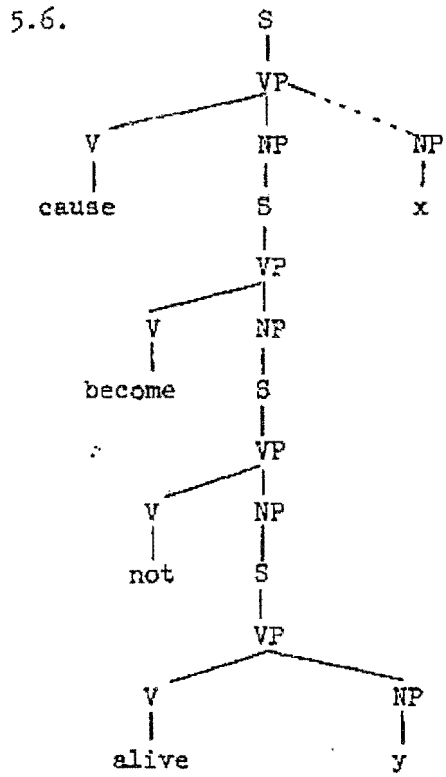
by predicate-raising.

5.5.



On the other hand, if 'x' is not an agent, it would originate from somewhere after cause. The only question we need ask here is whether the source of a non-agent 'x' would be before or after cause's complement sentence (whose main verb in this example is become). Since in surface structure no noun phrase can come between cause and its sentential object, it is reasonable to assume that 'x' would come after the sentential object in underlying structure. If this is so, the tree corresponding to 5.5 with 'x' represented as a non-agent would be 5.6.

5.6.



Just as in 5.5, so in 5.6 there are no intervening elements between cause and become, become and not, or not and alive.

The reformulation of the underlying structures of causative sentences, exemplified in 5.5 - 5.6, makes it possible to propose a constraint on predicate-raising. The constraint I propose is that predicate-raising cannot move a verb across an intervening element. That is, the verbs amalgamated by predicate-raising must be contiguous.

We have seen that the hypothesis that agents are simply deep subjects requires an underlying structure for a sentence with kill in which the noun phrase to become the superficial subject does not intervene between cause and become. But the hypothesis predicts that there will be one situation in which cause and become are separated

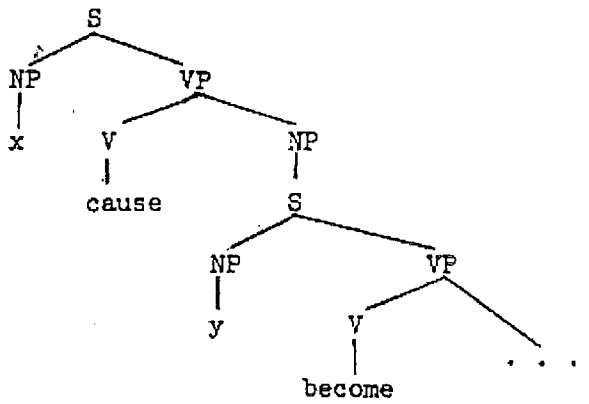
by a noun phrase in underlying structure--viz., when become takes an agent. The superficial verb become can take an agent, as is shown by 5.7 - 5.8.

5.7. Harry told Mary to become a nun.

5.8. Mary cleverly became a nun.

Suppose, then, we start with an underlying structure of the form 5.9, where 'y' is an agent and therefore a deep subject.

5.9.



The constraint just proposed will prevent predicate-raising from applying to amalgamate cause and become in a structure like 5.9. Whether this prediction is borne out will depend on whether there are causative verbs in English that take agent objects. Predicate-raising will change 5.9 into [x cause-become y ...], where 'y' goes back to a deep subject and hence, by hypothesis, is an agent. Are there sentences like 'John killized Mary George' (meaning 'John caused Mary to kill George')? By-and-large, there are not. *Killize is an impossible English verb (I will consider verbs like gallop in a moment).

The argument is now the following. If agents are the only deep subjects, then agents may be the only subjects present when predicate-

raising applies. It then becomes possible to place a natural constraint on predicate-raising, the existence of this constraint being confirmed by the non-occurrence of causative verbs with agent objects.

There are at least four objections that could be raised to the foregoing argument. The first is that there are, after all, verbs in English that take agent objects. The intransitive verbs walk, run, gallop, canter, follow certainly may take agent subjects:

5.10. The horse eagerly { walked / ran / galloped / cantered } across the field.

5.11. The horse eagerly followed (after) the trainer.

There are corresponding transitive causatives, whose objects have the same role as do the subjects of the intransitive sentences (see Lyons, 1968):

5.12. The trainer { walked / ran / galloped / cantered } the horse across the field.

5.13. The trainer led the horse (after him).

5.12 - 5.13 are thus causatives with agent objects, and one must conclude that there is no factual basis for the argument offered.

There are several lines that could be taken in replying to this objection. One would be to observe that the objects in 5.12 - 5.13 do not satisfy the tests for agentiveness given in Chapter Two. For instance, 5.14 - 5.15 are unacceptable.

5.14. *The trainer { walked / ran / galloped / cantered } the horse eagerly across the field. (The horse was eager.)

5.15. *The trainer led the horse eagerly after him. (The horse was eager.)

If manner adverbs could refer to objects, as in the intended interpretations of 5.14 - 5.15, this would indicate that the objects were agents (see Chapter Ten). The most acceptable example of this that I have found is 5.16, which is at best marginal.

5.16. ?The policeman led the child dejectedly out of the ice-cream parlor. (The child was dejected.)

My problem here is that I do not know enough about the "tests for agentiveness" to be able to judge when they should be applicable. Instead of attempting to determine directly whether the objects in question are agents, I will rely on a conclusion to be reached in Chapter Nine. I argue in Chapter Nine that when there is an agent subject, a causative verb cannot be syntactically decomposed into cause plus one or more other verbs. There are verbs that result from predicate-raising to cause, but such verbs occur only in non-agentive sentences. Granted the validity of this conclusion, the derivations of 5.14 - 5.15 do not involve predicate-raising to cause, because the sentences are agentive. In fact, the verbs in question (walk, etc.) are pro-agentive when used transitively:

5.17. *The saddle { walked / ran / galloped / cantered } the horse across the field.

It is true that transitive lead may take a non-agent subject (5.18), but in this case lead seems no longer to be a causative; 5.19 is not close in meaning to 5.18.

5.18. Polaris led us out of the wilderness.

≠ 5.19.??Polaris caused us to follow after it out of the wilderness.

Of course, the force of this reply will depend on the quality of argumentation in Chapter Nine.

McCawley's analysis of kill (quoted in the first part of this chapter) is from the present standpoint incorrect. However, a different causative verb (one that does come from cause plus other verbs) would exemplify the predicate-raising transformation equally well.

A second objection, which I will mention but not reply to, concerns the second causative constructions in languages like Hindi and Finnish. The second causatives have verbs like the hypothetical English verb *killize--causatives of agentive verbs. In these two languages not only may the sentential complement of a second causative be agentive, but apparently it must be agentive (for Hindi, see Kachru, 1966, pp. 62ff; for Finnish, see Wall, 1968). An inquiry into the second causative construction would of course take us well beyond the bounds of English syntax. Suffice it to say at this point that I make no claim of universality for the constraint on predicate-raising I have proposed.

Yet another objection is that the non-occurrence of agent objects is a special case of one or more general phenomena. Fillmore has

argued that there can be but one instance of a role, or deep case, per underlying clause (discounting conjunctions of noun phrases; see Fillmore, 1966, 1968). If we reject the causative analysis of verbs like kill and regard causative constructions as having underlying structures roughly the same as their superficial structures, then the non-occurrence of the configuration 'Agent Verb Agent' is an instance of the one-role-per-clause restriction. On the other hand, the non-occurrence of 'Non-Agent Verb Agent' is an instance of Fillmore's subject-choice hierarchy (other things being equal, an agent is the first choice for subject; see Chapter Three). As must be apparent, the choice between these alternative accounts will depend crucially on some agreement about the underlying complexity of causative constructions. If there are causative constructions in whose derivations predicate-raising to cause plays a part (as I maintain there are, in Chapter Nine), then the lack of superficial configurations of the form 'Non-Agent Verb Agent' requires an account that goes beyond Fillmore's generalizations.

The last objection is one that is discussed in Chapter Nine. I give there an analysis of a certain stress phenomenon which seems to indicate that predicate-raising moves verbs across experiencer noun phrases. If this analysis is correct, the constraint on predicate-raising cannot be maintained.

CHAPTER SIX

THE LIKE-SUBJECT REQUIREMENT

In certain cases the subject of an embedded sentence must be identical to some noun phrase in the matrix sentence. For instance the subject of leave in 6.1 and 6.2, although it has been deleted, is understood to be John.

6.1. John condescended to leave.

6.2. Harry persuaded John to leave.

Note that such cases as 6.1 and 6.2 are entirely distinct from the instances of subject-raising that have been brought up earlier (Chapters Two and Three). To note only one difference, the main verb of a sentence like 6.1 or 6.2 restricts a noun phrase in the position of John to animacy. One does not find such a restriction in cases of subject-raising; note 6.3 and 6.4.

6.3. It is likely to rain.

6.4. Harry believed it to have rained.

Owing to this and other differences from derivations with subject-raising, it has always been supposed that in 6.1, for example, condescend and leave both start out with subject (both are John) and that the subject of leave is deleted (see Poutsma, 1904-26; and Rosenbaum, 1967). It follows from the unacceptability of 6.5 - 6.8

that the subject of the complement is required to be the same as the noun phrase in the higher sentence and that this subject must be deleted.

6.5. *John condescended for George to leave.

6.6. *John condescended for himself to leave.

6.7. *Harry persuaded John for George to leave.

6.8. *Harry persuaded John for himself to leave.

Perlmutter has termed this requirement of identity the 'like-subject requirement.' Since Rosenbaum's analysis of the phenomenon (see Rosenbaum, 1967, p. 17), it has received much discussion. Lakoff (1965) proposes a connection between the requirement and the deletion of the complement subject. Perlmutter (1968) argues that the like-subject requirement applies to underlying structures, while Postal's (1968) contention is that the deletion of the complement subject takes place sometime after its deletability is established. Most recently Grosu (1970) has claimed that the like-subject requirement must apply between two subjects. This is not a comprehensive review of the literature on this subject, nor has the matter been made so clear by any of these authors that further discussion can be avoided. My purpose here is just to build on Perlmutter's analysis in order to construct an argument for agents' being the only deep subjects.

Let me first give a brief paraphrase of one of Perlmutter's arguments that the like-subject requirement must be applied at the level of underlying structure (Perlmutter, 1968, p. 39). Aside from a doubtful case of a pre-cyclic transformation (S-deletion; see Lakoff,

1966), the earliest transformations in a derivation apply cyclically--first to sentences which do not themselves include embedded sentences, then to sentences that embed the preceding sort of sentences (to which the cyclic transformations have applied once), and so on up a phrase structure tree. A constraint is 'pre-cyclic' if it must apply to an embedding sentence before a cyclic transformation has applied to the sentence embedded in the embedding sentence. It follows from the preceding that a pre-cyclic constraint applies very early in a derivation; in the absence of evidence to the contrary such a constraint may be assumed to apply at the level of underlying structure. It suffices then to show that the like-subject requirement is a pre-cyclic constraint.

Perlmutter gives the examples 6.9 and 6.10.

6.9. I condescended to allow him to go.

6.10. *I condescended to be allowed to go.

6.10 must be unacceptable because it fails to meet the like-subject requirement, yet after the passive transformation has applied to the sentential object of condescend the requirement is met. Consequently the appropriate place in the derivation of 6.10 to apply the like-subject requirement is before the passive transformation has applied to the complement (when it has the form of 'someone allow me to go'). Since the requirement is stated on the main sentence of 6.10 (the antecedent is the subject of condescend) before the complement is passivized, and since passive is a cyclic transformation (see Lakoff, 1966, and McCawley, 1970), the like-subject requirement is indeed pre-cyclic.

The argument based on Perlmutter's demonstration now goes as follows. If agents are the only deep subjects, we predict that the sentential object of condescend must be agentive, as in fact it must. Perlmutter notes that condescend's complement cannot have a stative main verb, but in fact the complement cannot have any anti-agentive main verb.

6.11. *John condescended to have red hair.

6.12. *John condescended to prove to like fish.

6.13. *John condescended to loom over us.

If it were not the case that agents were deep subjects and the only such, then there would be no apparent connection between these two constraints on the complement of condescend: that the complement must meet the like-subject requirement and that it must be agentive.

There are difficulties with this argument, but before looking at these let me note two more instances where it seems that an agentive restriction is a consequence of the like-subject requirement. The subject of a by-clause which is constituent in an agentive sentence is understood to be coreferential with the agent subject of the main sentence, as in 6.14 - 6.15.

6.14. John assassinated the Premier by shooting him.

6.15. *John assassinated the Premier by Harry's shooting him.

But as was noted in Chapter Two, in such circumstances the sentence of the by-clause must be agentive.

A similar example is agentive begin. It was proposed in Chapter Three that begin takes an optional agent, which must be present in a

pro-agentive context like cleverly in 6.16.

6.16. John cleverly began running.

Supplying the understood subject of run, we find, then, two John's in the underlying structure of 6.16, the second of which is deleted. But the subject of run cannot be different from John, as 6.17 shows, so here we have a case of the like-subject requirement.

6.17. *John cleverly began Mary's running.

From this we predict that begin in an agentive sentence must take an agentive object complement, which turns out to be the case.

6.18. *John cleverly began looming over us.

Naturally the like-subject requirement could not apply to a non-agentive sentence with begin since there is no antecedent noun phrase, so the acceptability and non-agentiveness of 6.19 are correctly predicted.

6.19. John began looming over us.

Now there are difficulties with Perlmutter's analysis of the like-subject requirement; some he points out, and others are brought up by Newmeyer in Aspectual Verbs in English (1969). But aside from these difficulties, which I will not discuss, there is at least one problem in connecting the like-subject and agentive constraints in the way I have just proposed. This is that there are verbs that have just one of these constraints on their complements. If the two constraints can apply separately, then there is a case for regarding it as a coincidence that both apply to sentential complement of verbs like condescend.

The true causative verb have requires an agentive sentential object, yet does not impose the like-subject requirement. In examples

6.20 - 6.22 I cite sentences with *have* in the progressive, since this eliminates a possible confusion with two other *have* constructions which were termed 'stative' and 'pseudo-causative' in Lee (1967). Stative *have* and pseudo-causative *have* do not occur in the progressive and, instead of requiring agentive complements, disallow them.

6.20. Mary was having John be careful.

6.21. *Mary was having John loom over them.

6.22. *Mary was having John grow to like fish.

On the other hand, *try*, *manage*, *succeed in* impose the like-subject requirement (6.23 - 6.26), yet sometimes allow non-agentive complements (6.27 - 6.32).

6.23. John {managed / tried} to leave.

6.24. *John {managed / tried} for Mary to leave.

6.25. John succeeded in leaving.

6.26. *John succeeded in Mary's leaving.

6.27. John tried to hear the funny noise.

but 6.28. *John cleverly heard the funny noise.

6.29. John managed to worry Mary.

but 6.30. ?John avidly worried Mary. (not in the sense 'harass')

6.31. John succeeded in giving Mary an urge to trip him.

but 6.32. ?Harry persuaded John to give Mary an urge to trip him.

This second sort of case, where the like-subject requirement does not entail an agentive constraint, is the worse for the theory that agents are the only deep subjects, because it seems to show that some non-agents are deep subjects. In the rest of this chapter, I will attempt

a salvage operation by introducing an epicycle. There are two like-subject requirements, one of which applies at or soon after the level of underlying structure (the deep requirement) and the second of which applies later, when non-agent noun phrases have become subjects (the level of shallow structure; see Lakoff, 1969). The deep requirement does entail that the complement be agentive, but the shallow one does not.

There are at least three cases where I think one can see two like-subject requirements at work. The first is in an infinitival complement of the verb ask. Consider 6.33.

6.33. John asked the guard to be allowed to leave the room.

The understood subject of the complement sentence is of course John, but the understood subject of the active source sentence is the guard. That these understandings are imposed by like-subject requirements is shown by the marginal nature of 6.34 - 6.36.

6.34. ?John asked the guard for Harry to be allowed to leave the room.

6.35. ?John asked the guard for Harry to allow him to leave the room.

6.36. ?John asked the guard to be allowed by Harry to leave the room.

Note that the constraint on the subject of the complement's active source sentence is pre-cyclical, while the constraint on the subject of the passivized complement cannot be pre-cyclical. It should now follow that the noun phrase constrained by the deep, pre-cyclic requirement must be an agent; this is demonstrated by the unacceptability

of 6.37, which follows from the fact that 6.38 would ordinarily be interpreted non-agentively.

6.37. *John asked the guard to be given a tendency to vomit.

6.38. The guard gave John a tendency to vomit.

A second case of two like-subject requirements is given in 6.39.

6.39. The Premier was assassinated by being shot.

The subject of be shot is understood to be the Premier, but also the unspecified logical subjects of be assassinated and be shot are understood to be coreferential. As in the previous case, the two agreements are obligatory, and the sentence whose subject is constrained must be agentive. It is worthwhile pointing out here that the shallow like-subject constraint could not be reformulated to constrain identity between the objects of the embedded and embedding sentences and apply pre-cyclically, because of the difference in acceptability between 6.40 and 6.41 (both of which come from the same underlying structure).

6.40. Someone assassinated the Premier by using a gun.

6.41. *The Premier was assassinated by a gun's being used.

These by-clause constructions will be looked at in more detail in Chapters Seven and Eight.

The third instance of the shallow like-subject constraint is less certain. Sentence 6.43 is just as bad as 6.42 (the sort of example Perlmutter's analysis is designed to handle).

6.42. *I condescended to be allowed to go.

6.43. *I condescended for John to be allowed (by me) to go.

If the underlying subject of the complement sentence in 6.43 is I, the deep like-subject requirement is satisfied, yet 6.43 is unacceptable. Both 6.42 and 6.43 could be ruled out by constraining condescend's complement to meet the deep and the shallow like-subject requirements. The only thing that makes this case doubtful is that Perlmutter has an alternative explanation of the unacceptability of 6.43. He proposes (attributing the observation to John Ross) that "...an ungrammatical sentence always results if the passive transformation applies in an embedded sentence whose subject is identical to the subject of the matrix sentence." (p. 59). Such a constraint would obviously rule out 6.43. I am willing to propose a different account only because I find it difficult to believe in the unacceptability of sentences like 6.44, even without special emphasis on the pronoun.

6.44. The doctor {wanted / expected} John to be examined by him. (where him refers to the doctor)

Whichever account of 6.43 is accepted, it appears that if a sentential complement must meet the deep like-subject requirement, then it also meets the shallow requirement.

It cannot be said, however, that the mysteries of try, manage, and succeed in have now been plumbed. Although I have given some evidence for a shallow like-subject requirement (or perhaps a re-application of the deep requirement), if this were the only requirement on the complements of try, etc., these complements should appear as passives. However 6.45 shows that they do not.

6.45. ?John { tried / managed } to be allowed to leave.

Examples like 6.45 derive their marginal acceptability from interpretations as reduced causatives ('John tried to get them to allow him to leave'), as Perlmutter shows, and so still manifest the deep like-subject constraint.

One further problem is the determination of the antecedent of the like-subject constraint. Following up Lakoff's (1965) decomposition of causatives (e.g., persuade may be from cause to intend to), it might be possible to constrain the antecedent to be a subject (see Grosu. 1970). This would be inconsistent with the analysis just presented, because, for example, the subject of intend is not an agent. However in Chapter Ten I shall argue that in a decisive number of cases the decomposition that would be required is not to be undertaken.

CHAPTER SEVEN

BY-CLAUSES

By-clauses consist of by plus a nominalized sentence or a relative clause construction, as in 7.1.

7.1. John amazed Mary by the way he ate.

This chapter is devoted to a taxonomy of such constructions. I shall talk about four sorts of by-clauses, to which I give the names 'cause,' 'enabler,' 'causative,' and 'method' by-clauses. Sentences with cause by-clauses have paraphrases in which the by-clause (without the by) appears as the subject of cause, as in 7.2 - 7.3.

7.2. John suffered by being an only child.

= 7.3. (John's) Being an only child caused John to suffer.

Similarly, sentences with enabler by-clauses have paraphrases with the nominalization of the by-clause as the subject of enable:

7.4. John overheard the conversation by having his ear at the keyhole.

= 7.5. (John's) Having his ear at the keyhole enabled John to overhear the conversation.

Causative by-clauses occur in non-agentive sentences, and do not fall into either of the two preceding categories. They occur always with a causative verb in the main sentence:

7.6. John convinced Mary that he was a Russian by the way he grew his moustache.

Method by-clauses are those which occur in agentive sentences:

7.7. John assassinated the Premier by shooting him.

I do not apply the term 'by-clause' to constructions that arise from applying the passive transformation to a sentence with nominalization or relative clause construction as subject, even though such constructions appear similar to those just exemplified. So 7.8 does not, in my terminology, contain a by-clause.

7.8. Mary's feelings were hurt by John's leaving so early.

Of course, this decision to exclude passive constructions requires some justification, since it is tempting to suppose a similar derivation for passives and by-clauses. I have noticed two differences between the passive constructions and by-clauses, at least the second of which I think is a rather important difference. Note first that the subject of the sentences after by in 7.8 above, John, is not the same as the superficial subject of the main sentence. On the other hand, the subject of a sentence in a by-clause (the understood subject, in case of deletion) is always coreferential with the superficial subject of the main sentence. Hence 7.9 - 7.12 are unacceptable.

7.9. ?John suffered by Harry's being an only child. (compare 7.2)

7.10. ?John overheard the conversation by George's having his ear to the keyhole. (compare 7.4)

7.11. *John convinced Mary that he was a Russian by the way Harry grew his moustache.

7.12. *John assassinated the Premier by George's shooting him.

The judgments are generally less clear with cause and enabler by-clauses (7.9 and 7.10) than with causative and method by-clauses (7.11 and

7.12). Even with the latter two types, those with good imaginations may be able to construct situations that come close to being appropriately described by sentences like 7.11 and 7.12; however if my intuitions are not awry this can only be accomplished by imposing interpretations as cause or enabler constructions.

The second difference between by-clauses and the passive constructions is that by-clauses can be questioned by how; compare 7.13 - 7.16 with the unacceptable 7.17 - 7.18.

7.13. How did John suffer? By being an only child.

7.14. How did John overhear the conversation? By having his ear at the keyhole.

7.15. How did John convince Mary that he was a Russian? By the way he grew his moustache.

7.16. How did John assassinate the Premier? By shooting him.

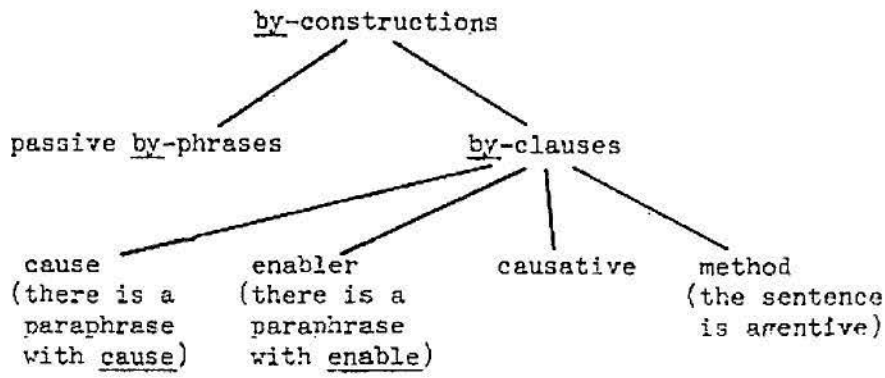
7.17. How was the Premier assassinated? *By John.

7.18. How was it implied that John disliked them? *By his leaving so early.

I attribute this difference to the fact that only constituents in underlying structure can be questioned. By-clauses are deep constituents, but the by of the passive is not present in underlying structure--it is added by transformation. Given this basic difference, a common source for by-clauses and passive by-phrases is out of the question. By-clauses in fact are manner adverbs, and with some exceptions go only with non-stative verbs; but of course many stative verbs can be passivized.

The diagram 7.19 summarizes the proposed taxonomy of by-constructions.

7.19.



I wish now to reduce the four categories of by-clauses exemplified above to the two more fundamental categories. I shall claim that sentences with cause and enabler by-clauses are reduced from more basic sentences with the main verb cause and are special cases of causative by-clauses. This will leave only two sorts of by-clauses--causative and method.

Consider first that getting cause by-clauses from higher sentences with cause is required for a syntactic account of the paraphrases with cause, of which I give a few more examples in 7.20 - 7.25.

7.20. John broke his leg by falling on the ice.

= 7.21. Falling on the ice caused John to break his leg.

7.22. John received a bite by forgetting to muzzle his dog.

= 7.23. Forgetting to muzzle his dog caused John to receive a bite.

7.24. John succeeded in avoiding the draft by being eight feet tall.

= 7.25. Being eight feet tall caused John to succeed in avoiding the draft.

In turn, we need the higher sentence analysis to account for paraphrases of sentences with enabler by-clauses, since 7.26 is a further paraphrase

of 7.24 - 7.25, and 7.27 - 7.30 are paraphrases.

7.26. John avoided the draft by being eight feet tall.

7.27. John overheard the conversation by having his ear at the keyhole.

= 7.28. John succeeded in overhearing the conversation by having his ear at the keyhole.

= 7.29. Having his ear at the keyhole caused John to succeed in overhearing the conversation.

= 7.30. Having his ear at the keyhole enabled John to overhear the conversation.

To account for enabler by-clauses, then, in addition to whatever mechanism is necessary to produce cause by-clause constructions by deleting cause (7.29 → 7.28), we will need to delete succeed in (7.28 → 7.27) and to change cause to succeed in into enable (7.29 → 7.30). The existence of these sets of paraphrases does not show that a higher sentence analysis of cause and enabler by-clauses is correct, of course; it merely shows that such an analysis is feasible. Before giving my reason for believing in the correctness of a higher sentence analysis, I wish to clear up an apparent difficulty.

Causative by-clauses are supposed not to occur in agentive sentences, yet enabler by-clauses can occur in sentences with pro-agentive verbs, as 7.31 - 7.34 show.[1]

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[1]Some people do not accept 7.31, 7.33, and other sentences in which the verb phrase of the enabler by-clause is anti-agentive. A stative verb was chosen for these examples merely to avoid a method by-clause interpretation; the acceptability of 7.31 and 7.33 is not crucial for the analysis.

7.31. John assassinated the Premier by having a gun.

= 7.32. Having a gun enabled John to assassinate the Premier.

7.33. John ate the whole fish at once by having a big mouth.

= 7.34. Having a big mouth enabled John to eat the whole fish at once.

Furthermore, the sentences 7.31 and 7.33 are non-agentive, since they are rejected in other pro-agentive contexts:

7.35. *John assassinated the Premier by having a gun in order to prove something.

7.36. *John enthusiastically ate the whole fish at once by having a big mouth.

The higher sentence analysis allows us to resolve this difficulty by saying that, despite appearances, the main verbs of 7.31 and 7.33 are not assassinate and eat, but rather cause in both cases. There is no problem here if we consider the underlying form; in 7.31 and 7.33 the agents demanded by assassinate and eat are present, but they are agents of embedded sentences, not of the matrix sentences. I should point out that the adverbs like enthusiastically must go with the matrix sentence if they come before the verb (as in 7.36), but can go with the embedded clause if they come just before the by-clause as in 7.37.

7.37. John drove cleverly by having gone to a special school.

A source of some confusion is the fact that sentences with method by-clauses may also have interpretations as enabler constructions. Consider 7.38.

7.38. John assassinated the Premier by developing his muscles.

7.39 could mean that John's doing exercises made him so strong that he was able to assassinate the Premier (an enabler construction) or it could mean that John, as the Premier's trainer, got him to exercise so much that the Premier's muscles became over developed, put a strain on his heart, and this killed him. This second interpretation disappears, however, when the sentence is in an external-type pro-agentive context. 7.39 is unambiguous; his refers to John.

7.39. His cell leader ordered John to assassinate the Premier by developing his muscles.

Now the argument for the higher sentence analysis of sentences with cause or enabler by-clauses is that the analysis is required in order to account for some apparent exceptions to a certain constraint and to account for the unexpected non-ambiguity of some by-clause constructions. The constraint, perhaps a special case of Fillmore's one-role-per-clause constraint (see Chapter Five), is that there can be just one manner adverb per underlying clause. This manner-adverb-exclusion constraint accounts for the unacceptability of such sentences as 7.40 - 7.41.

7.40. *John opened the window carefully suddenly.

7.41. *Mary washed her socks slowly thoroughly.

However, using -ly adverbs to exemplify this constraint is not straightforward, since such adverbs need not be adverbs of manner. Particularly in the position before the verb, these adverbs can have quite a different function. In at least one interpretation of 7.42, quickly is not a manner adverb.

7.42. Mary quickly washed her socks.

The normal sense of 7.42 is not that quickly qualifies just the action of Mary's washing but rather that it refers to the interval between some unspecified time and Mary's washing. It is not surprising, then, that 7.43 is perfectly acceptable, but only in an interpretation where quickly is not a manner adverb.

7.43. Mary quickly washed her socks thoroughly.

Rapidly, as opposed to quickly, has a tendency to be interpreted only as a manner adverb. Hence 7.44 is a little worse than 7.43.

7.44. ?Mary rapidly washed her socks thoroughly.

But it is always fair to call adverbs of the form 'in a _____ manner' manner adverbs. To give one more illustration of the distinctions that must be made, note that in final position deliberately can generally be interpreted as meaning 'in a deliberate manner', in which case it is a manner adverb, or 'on purpose', in which case it is not. Before the verb, it tends to have the latter interpretation:

7.45. Mary washed her socks deliberately.

7.46. Mary deliberately washed her socks.

The constraint to one manner adverb per clause is verified by the fact that when deliberately co-occurs with a manner adverb, it has only the sense of 'on purpose':

7.47. Mary washed her socks in a thorough manner deliberately.

How can question several sorts of adverbs, but in these cases where an -ly adverb can either function as a manner adverb or not, how can question only the manner adverb. So in answer to 'How did Mary wash her socks?', 7.45 above is unambiguous and 7.46 is unacceptable.

The relevance of all this to by-clauses is that when a by-clause co-occurs with another manner adverb, the by-clause must be a cause or enabler by-clause. Thus, while 7.48 is not necessarily a paraphrase of 7.49 (7.48 is not a paraphrase if its by-clause is taken as a method by-clause), 7.50 is an exact paraphrase of 7.51.

7.48. Mary washed her socks by using a detergent.

7.49. Using a detergent enabled Mary to wash her socks.

7.50. Mary washed her socks rapidly by using a detergent.

= 7.51. Using a detergent enabled Mary to wash her socks rapidly.

Similarly, the question 7.52 can only be taken in the sense of 7.53 or 7.54.

7.52. How did Mary wash her socks rapidly?

= 7.53. What enabled Mary to wash her socks rapidly?

or 7.54. What caused Mary to wash her socks rapidly?

Method by-clauses act like -ly manner adverbs, but there are no -ly adverbs that act like cause or enabler by-clauses. 7.55 could be answered with either a by-clause (e.g., By using a detergent), or with an appropriate -ly manner adverb (Rapidly), but 7.52 above cannot be answered with an -ly adverb.

7.55. How did Mary wash her socks?

With the higher sentence analysis of cause and enabler by-clauses, we can understand sentences like 7.50 where two manner adverbs come together in the same superficial clause. The manner adverb constraint is not violated in 7.50, since in underlying structure the first manner

adverb goes with an embedded sentence (whose main verb is wash), but the second manner adverb goes with the matrix (whose main verb is Cause). We can also understand the loss of ambiguity between sorts of by-clauses when another manner adverb is added to the sentence.

Given the correctness of the higher sentence analysis, we are left with two categories--causative by-clauses (including cause and enabler by-clauses) and method by-clauses. I said at the beginning of the chapter that causative by-clauses occur in non-agentive sentences, while method by-clauses occur in agentive sentences. It remains to be shown that this classification into two types is not just a whim, but expresses a real distinction. In what follows I cite several properties that distinguish causative and method by-clauses.

For one thing, the sentence contained in a method by-clause must be agentive, whereas a sentence in a causative by-clause need not be. From this it follows that a sentence with a non-agentive by-clause cannot itself be agentive. 7.56 - 7.58 confirm this observation.

7.56. *John deliberately amazed Mary by being so tall.

7.57. *Harry persuaded John to frighten the baby by casting a dark shadow.

7.58. *John enthusiastically demonstrated the correctness of Mary's prediction by turning out to have a birthmark.

It also follows that an ambiguous sentence with a by-clause that can be either method or causative will be disambiguated by changing the verb of the by-clause to an anti-agentive verb. Compare 7.59 (with a method or enabler by-clause) with the unambiguous 7.60.

7.69. John ate the fish by using a fork.

7.60. John ate the fish by having a fork.

Looking at matters the other way, a sentence that would in isolation be ambiguously either agentive or non-agentive, must be agentive when put into a by-clause that occurs in an agentive sentence. Compare the ambiguous 7.61 with 7.62.

7.61. John frightened the baby.

7.62. John cleverly demonstrated his point by frightening the baby.

Another difference is that causative by-clauses express reasons, but method by-clauses do not. 7.63 - 7.68 give pairs of close paraphrases.

7.63. John prevented our departure by lying asleep in front of the door.

= 7.64. The reason John prevented our departure was that he lay asleep in front of the door.

7.65. John broke his leg by falling on the ice. (cause by-clause)

= 7.66. The reason John broke his leg was that he fell on the ice.

7.67. John won by having the longest stride. (enabler by-clause)

= 7.68. The reason John won was that he had the longest stride.

However 7.69 and 7.70 are not at all close in meaning.

7.69. John cleverly prevented our departure by lying on the floor.

≠ 7.70. The reason that John cleverly prevented our departure was that he lay on the floor.

What lies behind this difference between causative and method by-clauses

will be explored in Chapter Eight.

A third difference is that relative clause constructions with by occur as causative by-clauses, but not as method by-clauses. Compare 7.71 and 7.72.

7.71. John frightened the baby by the way he walked.

7.72. ?John deliberately frightened the baby by the way he walked.

In general method by-clauses require the deletion of the subject of the sentence in the by-clause, and perhaps the unacceptability of 7.72 has to do with the difficulty of deleting the subject of a finite clause. 7.73 - 7.76 show that deleting the subject in a method by-clause increases acceptability.

7.73. ?Mary ordered John to postpone the question by his concealment of the evidence.

7.74. Mary ordered John to postpone the question by concealment of the evidence.

7.75. ?John cleverly assassinated the Premier by his use of a gun.

7.76. John cleverly assassinated the Premier by the use of a gun.

In such cases of by plus a derived nominal, however, this difference is often quite marginal. Conversely, causative by-clauses with derived nominals are more acceptable when they retain their subjects:

7.77. John turned out to annoy Mary by his insistence on the point.

7.78. ?John turned out to annoy Mary by insistence on the point.

The point in having turn out in these examples is to guarantee that we are dealing with a causative by-clause, since the complement of turn

out cannot be agentive.

When the by-clause consists of by plus a gerundive nominal, all by-clauses are better without subjects, as was pointed out above.

These concomitant differences between by-clauses in agentive sentences and those in non-agentive sentences certainly seem to justify supposing some important distinction between the two sorts of by-clauses or the two sorts of sentences that contain them. Some of the differences will be analyzed in the following chapter.

CHAPTER EIGHT

SUBJECTS FROM BY-CLAUSES

To propose that agents are the only deep subjects is at the same time to take on the duty of finding out where non-agent superficial subjects come from. Conversely, if there are plausible sources for non-agent subjects other than the superficial positions as subjects, then the theory that agents are the only deep subjects will seem more likely to be correct. In this chapter I suggest by-clauses as the source for non-agent subjects of certain causative verbs. The class of verbs in question will be discussed in the next chapter, but lest the scope of the present proposal seem unduly restrictive, I should say now that all non-agent subjects of causatives are from instrumental phrases (see Chapter Three) or from by-clauses.

As was noted in Chapter Seven, the subject of a by-clause must be coreferential with the subject of the matrix sentence. The present example 8.1 was also discussed in Chapter Six, where it was seen to display a deep like-subject requirement, as well as a shallow (post-passive) like-subject requirement.

8.1. The Premier was assassinated by being shot.

Besides being coreferential, the logical subjects of the main sentence and by-clause of 8.1 are both agents. I attributed this to the pre-cyclical application of the deep like-subject requirement, since only

agents are subjects before the cycle. Since 8.1 contains a method by-clause, since such by-clause examples with a demonstrably pre-cyclical like-subject requirement always have method by-clauses, and since all method by-clauses occur in agentive sentences and are themselves agentive, I will suppose that the deep like-subject requirement applies to all method by-clauses. This requirement will then account for the subject-subject agreement found with method by-clauses, as also for the requirement that method by-clauses must be agentive.

But the subject-subject agreement in sentences with causative by-clauses cannot be attributed to a deep like-subject requirement. Causative by-clauses do not yield examples of double agreement, and need not be agentive. At this point it will be instructive to examine a paradigm of sentences with a verb that can take both method and causative by-clauses:

8.2. John cleverly prevented us from leaving by lying on the floor. (method by-clause)

8.3. John prevented us from leaving by lying asleep on the floor. (causative by-clause)

= 8.4. John's lying asleep on the floor prevented us from leaving.

Paradigms like 8.2 - 8.4 share a number of similarities with the paradigms considered in Chapter Three, particularly the begin paradigm. This suggests that prevent takes an optional agent, and that in 8.3 (where there is no agent in the main sentence) John is a fill-in taken from the by-clause by the familiar process of subject-raising. We can then account for the fact that 8.3 and 8.4 are paraphrases by

allowing a choice in subject-raising: either the whole by-clause is raised (by being then deleted just as instrumental with is deleted), or just the subject of the by-clause is raised. Allowing such a choice is not at all arbitrary in this case, since the existence of a choice between the whole or part of a verb phrase constituent is a general feature of situations where a noun phrase may fill-in for a missing agent. In particular, exactly this choice between the subject of a sentence or the whole sentence is present in the case of begin. Compare 8.5 - 8.6 with 8.7 - 8.8.

8.5. Mary surprised us by decaying.

= 8.6. Mary's decaying surprised us.

8.7. Mary began decaying.

= 8.8. Mary's decaying began.

The parallelism extends even further. Begin imposes the like-subject requirement on its sentential object, the antecedent being the subject of begin. If begin has no agent and thus no subject, the requirement is vacuous. Hence, the like-subject requirement accounts for the fact that begin and prevent in agentive sentences require an agentive sentential object and by-clause, respectively.

Thus although both method and causative by-clauses display agreement between their subjects and the subjects of their matrix sentences, this agreement comes about in two quite different ways--through the deep like-subject requirement or through subject-raising.

Two other similarities between by-clause paradigms and the paradigms in Chapter Three should be pointed out. In both, the part-

constituent may become subject of the main sentence and still be represented by a pronoun in its original position. In the case of causative by-clauses, this was illustrated in the previous chapter by examples like 8.9.

8.9. John frightened the baby by the way he walked.

Furthermore, by-clauses also furnish cases of functional agentive/non-agentive ambiguity, as in 8.10 which can be construed as having either a causative or a method by-clause.

8.10. John prevented us from leaving by lying on the floor.

The ambiguity of 8.10 is perhaps not entirely obvious because the agentive interpretation implies the non-agentive interpretation (but not the reverse). This can be seen by noting that 8.11 implies 8.12 as well as implying the non-agentive sense of 8.10 (in which sense 8.10 is a paraphrase of 8.12).

8.11. John cleverly prevented us from leaving by lying on the floor.

8.12. John's lying on the floor prevented us from leaving.

Of course adding asleep after lying in 8.10 disambiguates the main sentence, and this device was deliberately employed in previous examples to avoid an ambiguity at an awkward point in the argument.

In contrast to verbs like prevent, persuade, frighten, which take either causative or method by-clauses, there are verbs that take only method by-clauses (discounting now cause and enabling by-clauses which are not in construction with the superficial main verb.) These are pro-agentive verbs. Since sentences with pro-agentive verbs and method by-clauses are like the agentive members of the paradigms we have just

considered, it is straightforward to extend the preceding analysis to these cases. All that need be said is that the verb requires an underlying subject and that this subject calls into play the deep like-subject constraint, which in turn requires the by-clause to be agentive.

This analysis of causative and method by-clauses makes a prediction about subject-verb constraints. If the main subject in a sentence with a causative by-clause is from the by-clause, one would not expect the main verb to restrict the choice of superficial subject. This is because the subject and verb are not closely connected in underlying structure; in fact they are from different clauses. On the other hand, main subject and verb in sentences with method by-clauses originate in the same clause and next to each other; here one expects selectional restrictions. By-and-large, this prediction is borne out. For instance, a sentence with the main verb scatter and a method by-clause must have a collective or plural subject.

8.13. The crowd hurriedly scattered by using every exit.

But to my knowledge, there is no verb which, when used with a causative by-clause, requires a plural or collective subject. Likewise, no verb with a causative by-clause requires an animate subject. There is an exception to the prediction, though. A few verbs (lead to, result in) take causative by-clauses, yet require abstract subjects. So compare 8.14 with 8.15.

8.14. Mary's hitting John led to his hospitalization by aggravating his kidney condition.

8.15. *Mary led to John's hospitalization by hitting him.

Since there are pro-agentive verbs that take (method) by-clauses, it would be odd were there not also anti-agentive verbs that take (causative) by-clauses. There are indeed a few verbs (or verbal phrases) whose use in agentive sentences is at least questionable. I list a few in 8.16.

8.16.	necessitate lead to result in doom oblige destine	gratify disappoint flabbergast amaze worry thrill stymy	give a person	a tendency an urge an idea

The verbs in the second column might be called "anthropomorphic" psych verbs, since human qualities are attributed to their objects (as opposed to annoy, frighten, surprise, whose objects can be animals).

But now a much more serious matter is the source of non-agent subjects when the sentence has no by-clause. It would be incredible if the subjects of 8.17 and 8.18 came from different places, since the sentences are interpreted in the same way (that is, the by-clause seems 'optional' in the sense of Chapter Two).

8.17. The cavern frightened Mary by being dark inside.

8.18. The cavern frightened Mary.

Since I claim that the subject of 8.17 is raised from the by-clause, and am convinced that the superficial subjects of 8.17 and 8.18 play the same role (have the same interpretation with respect to the verb and object), I must resort to a deleted by-clause in 8.18 to provide a source for the subject. Aside from having a subject (the cavern), the by-clause must be unspecified. There are independent reasons for

thinking that the derivation of 8.18 involves deleting a by-clause.

Recall the discussion of manner adverbs in Chapter Seven, where the constraint that a clause can have only one manner adverb was used to support the 'higher cause-sentence' analysis of cause and enabler by-clauses. It was noted that a question like 8.19 can be answered with a cause or enabler by-clause, but not with an -ly manner adverb.

8.19. How did John eat the fish so quickly?

This is because how questions a manner adverb here, but the clause whose main verb is eat already has a manner adverb, quickly, so that the only source for an additional adverb is a higher cause sentence. Now if 8.18 has an underlying by-clause, this should fill the manner adverb quota for the frighten clause. It should then be impossible to answer the question of 8.20 with an -ly manner adverb or with a phrase 'in a _____ manner.'

8.20. How did the cavern frighten Mary? { ?Gradually. / ?In a gradual manner. / ?Suddenly. / ?Simply. / ?In a simple manner. / ?In a terrible manner. / ?In an involved manner. }

Contrast 8.20 with 8.21, where the subject of frighten may be construed as an agent.

8.21. How did John frighten Mary? { Gradually. / In a gradual manner. / Suddenly. / Simply. / In a simple manner. / In a terrible manner. / In an involved manner. }

If John is an agent, there is no need to postulate an underlying by-

clause, and so there is room in the frighten clause for a manner adverb. Notice that John must be taken as an agent if the answers of 8.21 are to be appropriate. By the same token, the manner adverb in 8.22 forces an agentive interpretation:

8.22. John frightened Mary in an involved manner.

It also follows that an anti-agentive verb that takes a causative by-clause cannot take a manner adverb other than a by-clause:

8.23. *John gave Mary a strange urge gradually.

8.24. *John worried Mary in an involved manner.

In these circumstances, manner adverbs (except by-clauses) are pro-agentive. The manner adverbs could not be excluded from 8.23 - 8.24 on the grounds that the verbs were stative, because these verbs can occur in the progressive:

8.25. John was giving Mary a strange urge.

8.26. John was worrying Mary.

One final point is that adverbs which can ordinarily be interpreted as manner adverbs must receive another interpretation if they occur in sentences whose subjects come from by-clauses (whether or not the by-clause appears on the surface). In 8.27, quickly must signify that not much time elapsed before the cavern frightened Mary.

8.27. The cavern frightened Mary quickly.

In 8.28, horribly must be taken as an extent adverb.

8.28. The cavern frightened Mary horribly.

Another argument for later-deleted by-clauses as sources for non-agent subjects is provided by the paradoxical nature of 8.29.

8.29. The poison hastened Mary's death, and the poison was in the pill she took; but the pill she took did not hasten her death.

I would argue that the first sentence of 8.29, 'the poison hastened Mary's death', is incomplete because no physical connection has been established between the poison and Mary's death. Establishing such connections is the function of by-clauses, but here the by-clause has remained unspecified. Given the felt incompleteness of the first sentence, it is natural to take the second sentence as specifying what the by-clause should have been. That is, assuming 8.29 to be a connected discourse, the first two sentences have the force of 8.30.

8.30. The poison hastened Mary's death by being in the pill she took.

But since 8.30 is from 8.31, and since 8.32 and 8.33 are paraphrases, 8.30 has the paraphrase 8.34.

8.31. [hastened Mary's death by the poison's being in the pill she took]

8.32. The poison was in the pill Mary took.

8.33. The pill Mary took contained poison.

8.34. The pill Mary took hastened her death by containing poison.

8.34 can thus be deduced from the first two sentences of 8.29, but 8.34 is a contradiction of the last sentence in 8.29--hence the paradox. On the other hand 8.35 is not necessarily paradoxical, because its force may be to deny the relevancy of the second sentence to the first; that is, the second sentence is not to be taken as specifying a by-clause of the first.

8.35. The pill Mary took hastened her death, and the pill she took contained the poison; but the poison did not hasten her death.

The preceding can now be summed up as four arguments for getting non-agent subjects of verbs that take causative by-clauses, from those by-clauses.

First, we have the parallelism of the by-clause paradigm and the begin paradigm; and Perlmutter's arguments establish that begin can get its subject from its sentential complement. Perlmutter cites the examples 8.36 and 8.37.

8.36. It began to rain.

8.37. Heed began to be taken of the situation.

The expletive it must be associated with rain, since it is not anaphoric here. Likewise heed does not occur independently of take.

Second, if one maintained that these non-agent subjects were also deep subjects of the main sentence, it is difficult to see how to account for the fact that either the presence a non-agentive by-clause or the presence of a non-agentive main verb results in sets of paraphrases, consisting of a sentence with a sentential subject and a sentence with a simple subject and a by-clause. The paraphrase relationship itself would not be particularly difficult to account for (one could replace the subject with the by-clause, for instance), but it would not be easy to capture the connection between non-agentiveness and the existence of the paraphrases.

Third, the subject-raising analysis yields a pretty good semantic reconstruction. What 8.38 really means is that something about John

or something he did gave Mary a strange urge.

8.38. John gave Mary a strange urge.

Lastly, we can explain why a clause with a non-agent subject and a verb that can take a causative by-clause can contain no manner adverb other than that by-clause.

On the other hand, however, there are some problems with the analysis just given. For one thing, raising subjects that are quantified or have negatives changes the meaning of sentences. Compare 8.39 - 8.40 and 8.41 - 8.42.

8.39. Not one person annoyed John by falling asleep.

≠ 8.40. Not one person's falling asleep annoyed John.

8.41. Three men disappointed Mary by falling asleep.

≠ 8.42. Three men's falling asleep disappointed Mary.

It may be that the lack of synonymy in such cases is the result of restrictions on quantifier-lowering (see Lakoff, 1969). It appears that if the verb of the main sentence does not command a quantifier or a negative in underlying structure, then the quantifier or negative may not command the verb in shallow structure.

A more serious problem is that causative by-clauses with passive sentences are generally unacceptable, e.g. 8.43.

8.43. *John puzzled Mary by being asked to leave.

I have no idea why this should be so.

Finally, the unacceptability of sentences in which expletives have been raised, like 8.44 - 8.46, constitutes a good argument against my analysis.

8.44. *There annoyed John by being a commotion.

8.45. *It prevented the picnic by hailing.

8.46. *It annoyed Mary by raining all day.

I personally find 8.46 to be acceptable, but hardly anyone else does.

CHAPTER NINE

INDIRECT CAUSATION

This chapter deals with the decomposition of verbs in causative sentences into cause plus another verb. I shall argue that sentences normally regarded as causatives are of two sorts, which I term 'direct causatives' and 'indirect causatives'. An indirect causative is a sentence like 9.1, which is in a way incomplete.

9.1. The huge boulder prevented us from walking along the path.

9.1 really means that some property of the boulder of some event involving the boulder prevents us from walking along the path. In a specific situation, 9.1 might be filled in more by saying, e.g., 9.2.

9.2. The huge boulder's standing in our way prevented us from walking along the path.

Of course the incompleteness of sentences like 9.1 was cited in the last chapter to support the analysis given there, under which the subject of 9.1 would come from inside a by-clause and the subject of 9.2 would be derived by moving a whole by-clause to the front.

A direct causative is a sentence like 9.3.

9.3. John ate the fish.

Unlike 9.1, 9.3 cannot be filled in by substituting a sentential noun phrase for the subject.

My contention will be that indirect causatives are from underlying

structures with cause; i.e., the verb of an indirect causative, if it is not cause itself or an equivalent (such as make or bring about), must be analyzed into cause plus another verb. On the other hand, verbs of direct causatives do not lend themselves to decomposition. A direct causative is not an underlying structure with the verb cause unless its superficial verb is cause. Furthermore, all agentive causative sentences are direct causatives.

Before proceeding with the main argument, I shall point out the significance of the conclusion for the hypothesis that agents are the only deep subjects and also give a categorization of verbs that turn up in indirect causatives.

In Chapter Three I followed the analysis in Barbara Hall Partee's dissertation, Subject and Object in Modern English (1965). Her proposal was that such verbs as break take optional subjects. But she also considered an alternative analysis in which the transitive versions of break-type verbs are given a causative structure. In this causative analysis 9.4 would be a causative of 9.5--something like 9.6.

9.4. John broke the window. (in the agentive sense)

9.5. The window broke.

9.6. $_{S}$[John caused $_{S}$[the window break]]

The causative analysis is the one accepted in Lakoff (1965). Now if the causative analysis is correct, clearly the paradigms in Chapter Three no longer support the hypothesis that agents are the only deep subjects; we could account for the relationship between 9.4 and 9.5 either on the assumption that all sentences have deep subjects--with 9.6 as the underlying structure of 9.4--or on the assumption that there

are no deep subjects, in which case (with McCawley, 1970) we would give 9.7 as the underlying structure of 9.4.

9.7. $_S$[cause John $_S$[break the window]]

Both versions of the causative analysis seem to reflect the optionality of agents with break, etc., and this analysis has the additional advantage of revealing the intuitively felt causativeness of break when it has a direct object. Nevertheless, the causative analysis exemplified in 9.3 makes it difficult to account for the non-agentive paraphrase that was discussed in Chapter Three, although this would not be a problem with the McCawley version (9.7). The conclusion to be presented, however, gives an argument against any version of a causative analysis. 9.1 is agentive, and therefore it is a direct causative, whose verb cannot be decomposed into cause to break.

In the discussion of the deep like-subject requirement, I mentioned that if the antecedent must be a subject (compare Grosu, 1970) this would show immediately that there are some deep subjects that are not agents--and this because of verbs like intend. But the antecedent cannot always be a subject unless, for example, 9.8 comes from 9.9.

9.8. John cleverly persuaded Mary to leave.

9.9. John cleverly caused Mary to intend to leave.

That is, this proposal for the formulation of the like-subject requirement requires the decomposition of verbs in agentive sentences. If I am right, however, 9.8 cannot be from 9.9 because, being agentive, 9.8 is a direct causative.

Now it will be helpful to have a stock of indirect causative verbs

to work with. The indirect causatives, it will turn out, are just sentences with causative by-clauses. The verbs that take causative by-clauses fall into one of four categories:

IX.A. Cause and its synonyms: bring about, make.

IX.B. Verbs from cause plus a lower verb (or adjective) with an abstract complement (with become interpolated in the case of stative adjectives):

necessitate (cause to become necessary)

suggest (cause to seem)

clarify (cause to become clear)

guarantee (cause to become certain)

prevent (cause to become impossible or cause not to happen)

In the case of a verb that takes either an abstract or a concrete complement, like be clear, only the abstract complement allows the formation of an indirect causative. Compare 9.10 and 9.11.

9.10. The eggshells clarified the situation.

9.11. The eggshells clarified the wine.

It is apparent that the subjects in 9.10 and 9.11 are interpreted quite differently, the eggshells in 9.10 being a kind of abbreviation. If a causative by-clause is added to 9.11 it must be interpreted as an enabler by-clause, in which case it is not in construction with clarify but is from a higher sentence (see Chapter Seven).

IX.C. Verbs from cause plus a lower verb with an (animate) experiencer (Postal, 1968, calls these "psych verbs"):

frighten (cause to become frightened)

annoy (cause to become annoyed)

tickle (cause to become tickled)

flabbergast (cause to become flabbergasted)

irritate (cause to become irritated)

But again, changing the complement to a concrete inanimate, if possible at all, changes the sense of the construction to direct causation:

9.12. The feather tickled Mary. (in the sense 'made her amused')

9.13. The feather tickled Mary's foot.

9.14. The earring irritated Mary.

9.15. The earring irritated Mary's ear.

IX.D. Verbs from cause plus a lower verb with both an experiencer and an abstract complement:

persuade a person that.../cause a person to believe that...

suggest (to a person) that.../cause it to seem (to a person) that...

guarantee (a person) that.../cause it (or a person) to be certain that...

prepare a person for.../cause a person to be ready for...

give a person {an idea / an urge to... / second thoughts}/cause a person to have {an idea / an urge to... / second thoughts}

Supposing agents to be the only deep subjects, then A, B, C, and D can be summed up formulaically by saying that predicate-raising to

cause is possible only in the configuration: $_S[_{VP}[$cause $_S[V$ (experiencer (abstract)$]_S$ ..., where the linked parentheses mean one or both elements must be present.

I shall now give five arguments to the effect that the verbs in indirect causative constructions are decomposible into cause plus another verb, but the verbs in direct causative constructions are not.

Argument 1. Pairs of sentences like 9.16 - 9.17 and 9.18 - 9.19 are not quite paraphrases, although they are very close in meaning. (9.16 - 9.19 should be taken in their agentive readings.)

9.16. John killed Mary.

9.17. John caused Mary to die.

9.18. John boiled the water.

9.19. John caused the water to boil.

For 9.18 - 9.19, suppose for instance that the water was on the stove and John refused to turn off the burner; then 9.19 would be more appropriate than 9.18. However, this difference in interpretation does not obtain between corresponding indirect causatives:

9.20. The shoes necessitated a reconsideration.

= 9.21. The shoes caused a reconsideration to become necessary.

9.22. The box's surface suggested that it was made of wood.

= 9.23. The box's surface caused it to seem that it was made of wood.

This difference between the direct causatives 9.16 and 9.18 and the indirect causatives 9.20, 9.22 is a most direct kind of evidence for the position being argued.

It may seem odd that I am calling 9.17 and 9.19 direct causatives

in their agentive interpretations, since these sentences differ from 9.16 and 9.18 just in being less direct. However, the indirectness in 9.17 and 9.19 is with respect to the embedded sentences, not with respect to cause.

There is a class of verbs with experiencer objects that are apparent exceptions in that the simple version and the decomposed version with cause do not give exact paraphrases. The difference, however, is not one of "directness," so I will discuss these cases at the end of this chapter.

Argument 2. The verb cause takes an abstract subject or a causative by-clause; both of these are understood as expressing reasons. But direct causatives may not have abstract subjects:

9.24. *John's failure to turn off the burner boiled the water.

Hall Partee (1965, p. 28) pointed out the unacceptability of sentences like 9.24, as well as citing pairs of sentences like 9.25 - 9.26.

9.25. A change in molecular structure caused the window to break.

9.26. *A change in molecular structure broke the window.

Neither do direct causatives have causative by-clauses, unless they are enabler by-clauses from a higher sentence. Of course these two restrictions on direct causatives are really one restriction by the analysis of the preceding chapter. Given the present claim that indirect causatives are from cause sentences, causative by-clauses can be restricted to occurring in construction with the verb cause (when it does not have an agent).

Argument 3. Verbs in direct causatives tend to be idiosyncratic

in comparison with verbs in indirect causatives. This is what one would expect if direct causative verbs are really simple unanalyzable lexical items. For instance, a positive declarative indirect causative with suggest or guarantee implies the truth of the sentential object of cause (supposing appropriate decompositions of suggest and guarantee). This property can be attributed to cause, the truth of whose object complement is implied. So 9.27 implies 9.28 and 9.29 implies 9.30.

9.27. Something suggested to Mary that pigs were stupid.

9.28. It seemed to Mary that pigs were stupid.

9.29. The presence of an entry permit guaranteed Mary that she would be allowed to come along.

9.30. Mary was certain that she would be allowed to come along.

However, assuming the same decomposition, corresponding agentive direct causatives do not have this property. 9.31 does not imply 9.32 and 9.33 does not imply 9.34.

9.31. John cleverly suggested to Mary that pigs were stupid.

9.32. It seemed to Mary that pigs were stupid.

9.33. John condescendingly guaranteed Mary that she would be allowed to come along.

9.34. Mary was certain that she would be allowed to come along.

The fact that direct causatives may lack this implicative property indicates that they are not from cause sentences (compare with Wall, 1967).

In addition, direct causative verbs may be verbs of 'saying', while the similar verbs in indirect causatives are not. This is the

case with guarantee and suggest (but not persuade).

Pro-agentive verbs can, of course, not appear in indirect causatives, and it seems difficult to provide reasonable decompositions for such pro-agentive verbs as promise, ask, coax which take complement structures like 9.31 and 9.33 above. This is not surprising if I am correct, because such verbs would not be from cause plus another verb.

Argument 4. The adverb rather, when it comes after the subject and means 'somewhat' (not when it is part of a correlative), occurs only in indirect causatives. Compare 9.35, which has both a direct causative reading (agentive) and an indirect causative reading (non-agentive), with 9.36, which has only the latter reading.

9.35. John frightened the baby.

9.36. John rather frightened the baby.

I suppose that this rather is really a degree adverb that modifies the adjective of the lower sentence, as in 9.37.

9.37. John caused the baby to become rather frightened.

In this way we can account for why rather does not occur before a causative from cause plus a polar adjective; 9.38 is odd in the same way as 9.39.

9.38. ?John rather flabbergasted Mary.

9,39. ?Mary was rather flabbergasted.

So far as I can tell, this rather does not occur independently with verbs at all; its presence in sentences like 9.36 can be traced to its being given a "free ride" by predicate-raising, the transformation

that attaches the lower verb or adjective to cause (see Chapter Five). The presence of rather is a sign that predicate-raising has taken place, and this is why it does not appear in direct causatives, in whose derivations predicate-raising has not applied.

Of course there are adverbs which cannot be moved by predicate-raising; e.g., very and extremely.

Argument 5. If there is no special emphasis on some sentence element, the main stress of a clause usually comes at the end. This generalization is captured in Chomsky and Halle (1968) by the nuclear stress rule. Direct causatives are unexceptional in this regard.

9.40. John ate the fish.

9.41. John cleverly frightened the baby.

However, indirect causatives with verbs that take experiencers (psych verbs) have the main stress on the verb.

9.42. The dark room frightened the baby.

9.43. John dissatisfied Mary.

If the main stress in 9.42 and 9.43 is placed on the object, the object is given special emphasis.

Sentences like 9.42 - 9.43 need not be regarded as exceptions to the nuclear stress rule. Notice that in 9.44 (the source of 9.42) frighten comes at the end of its clause.

9.44. The dark room caused the baby to become frightened.

We can therefore account for the placement of the main stress in indirect causatives with experiencer objects by applying the nuclear stress rule before predicate-raising and by letting the complex verb that results

from predicate-raising take its stress from what was the lower verb. If this treatment of stress is correct, it follows that at the stage of derivation where the nuclear stress rule applies, indirect causatives appear in their decomposed versions, but direct causatives have their superficial forms. This indicates that the verbs of direct causatives are not decomposable.

This stress difference between direct and indirect causatives is consistent with the above observations. For example, 9.45 with main stress on baby does not exhibit neutral stress, but emphasizes baby.

9.45. John rather frightened the báby.

Similarly, when frighten (or any other psych verb) has an inanimate subject or takes a causative by-clause, the main stress is on the verb in a neutral sentence.

This treatment supposes that the nuclear stress rule precedes predicate-raising. There is some independent evidence that this might be the correct ordering. In Bresnan (1970) it is argued on the basis of such examples as 9.46 and 9.47 that the nuclear stress rule applies within the transformation cycle.

9.46. John has plans to léave.

9.47. John has pláns to leave.

The main stress of 9.46 comes at the end in regular fashion. In 9.47 however, leave is protected from receiving the main stress by the following noun phrase plans, which is deleted under coreference with the preceding plans. 9.47 comes from [John has plàns$_i$ to leave pláns$_i$];

when plans is deleted it carries the main stress with it. This results in a comparatively stronger stress on plans than on leave. Since the nuclear stress rule is known on other grounds to be cyclic (see Chomsky and Halle, 1968), and since it here precedes a syntactic deletion, there seems to be no reason to think that it does not apply within the transformational cycle.

If now it could be shown that predicate-raising is post-cyclic, the required ordering (first the stress rule then predicate-raising) would be demonstrated. The only indication I know of that predicate-raising is post-cyclic is a rather tentative statement in Lakoff (1969), where it is argued that dissuade must be formed from persuade not, presumably by predicate-raising, subsequent to the 'cut-off point' for a certain constraint. Lakoff further conjectures that this cut-off point may be the end of the cycle. I will not repeat the details here, because Lakoff's treatment is involved and leads to no certain conclusion that would advance the present argument.

It should be noted that this treatment of the stress difference between indirect and direct causative psych verbs is inconsistent with the contention in Chapter Five that no element may intervene between the two verbs involved in predicate-raising: the preceding has assumed that an experiencer noun phrase intervenes. I see no way to resolve this inconsistency, and so I conclude that either the present treatment of stress or the argument in Chapter Five must be incorrect. Another problem is that classes of verbs in indirect causatives other than the psych verbs like frighten do not display this peculiar verb stress.

Perhaps this indicates that at the time sentences are stressed, only agents and experiencers are subjects. In fact, of the arguments given for agents being the only deep subjects, only the predicate-raising argument and the like-subject argument (Chapter Six) have any bearing on whether experiencers are deep subjects; the other arguments concern only the subjects of causatives, which are never experiencers. Moreover, there are apparent exceptions to the like-subject argument when the lower subject is an experiencer (see example 6.27). However, an extension of the hypothesis to characterize experiencers as well as agents as deep subjects is not straightforward, and I have little positive evidence for such an extension.

That concludes the evidence for decomposing the verbs of indirect causatives but not those of direct causatives. This seems an appropriate place to mention a general difficulty with the approach in the case of psych verbs which we may call "anthropomorphic"--verbs with experiencer objects that are typically human. Non-agentive sentences with these verbs are not exact paraphrases of the corresponding cause sentences, because in the simple sentences the experiencer is presupposed to perceive the referent of the subject noun phrase. Compare 9.48 and 9.49.

9.48. The lamp persuaded Mary that she was in Borneo (by having a peculiar shape).

9.49. The lamp caused Mary to believe she was in Borneo (by falling on her head).

I think that in 9.49 Mary need not have perceived the lamp, but that she must have in 9.48. One proposal that could be made here is that

the lamp in the intended interpretation of 9.49 is an instrumental subject and is not from a by-clause.

CHAPTER TEN

-LY ADVERBS

I argued in Chapter Eight that non-agent subjects of verbs which take causative by-clauses are in fact from by-clauses; that is, the subjects of indirect causatives come from by-clauses. This chapter provides evidence to support that claim. There is a constraint on the underlying relationship of an -ly adverb and the noun phrase to which it refers--both must originate in the same clause. -ly adverbs in causative sentences may refer to agent subjects, but they may not refer to the non-agent subjects of indirect causatives; this indicates that the latter come from lower sentences.

Reference has already been made in Chapter One to the fact that adverbs like enthusiastically, eagerly, and cleverly provide tests not only for non-stativity, but also for agentiveness. Lakoff (1966) points out that the class of adverbs in question are subcategorized with respect to the subjects of sentences in which they occur. That is, such adverbs refer to subjects. To say 'Harry did it cleverly' is to say that Harry was clever in some respect. But it is not the case that all -ly adverbs which refer to noun phrases provide tests for agentiveness. Some adverbs may refer to non-agent subjects, as in 10.1 - 10.3.

10.1. The mountain loomed over them { whitely / snowily / greenly / redly / stonily } .

10.2. The wood burned wetly.

10.3. The road ran smoothly into the city.

The difference between the two classes of adverbs seems to consist in whether they presuppose animacy of the noun phrases they refer to. Whitely, greenly, etc. may refer to inanimate noun phrases, but cleverly, eagerly, etc. may not. Moreover, cleverly-type adverbs refer only to agents and either assert or presuppose intentionality on the part of the agent. Our concern here will be with whitely-type adverbs--i.e. those which may refer to non-agents.

Let us now ask what constraints there are on adverb reference. I propose that one such constraint is that the adverb and the noun phrase to which it refers must not come from different underlying clauses. Consider first a rather trivial example of this constraint. In 10.4, palely refers not to John but to the mountain.

10.4. The mountain John had climbed glimmered palely.

I suppose that palely in the underlying structure of 10.4 is in the clause whose main verb is glimmer--the main clause. It is possible that such adverbs actually come from higher sentences which do not appear in surface structure; Lakoff (1965) proposes a higher sentence analysis for cleverly-type adverbs. Although the wording of the present argument might be affected if such an analysis proved necessary, I think that nothing crucial hinges on whether the superficial interpretation accepted here is correct or not.

Before proceeding further, we will need some criteria for deciding what clause an adverb goes with. Consider 10.5:

10.5. John lifted the man who polished windows cleverly.

It is apparent that cleverly need not be a part of the main clause, but may go with the relative clause and refer to the man. On the other hand, in 10.6, cleverly is part of the main clause and refers to John.

10.6. John cleverly lifted the man who polished windows.

I believe that the state-of-affairs exemplified in 10.6 is typical; an -ly adverb in second position (between subject and verb) goes with the clause whose main verb it immediately precedes. 10.7 - 10.8 provide a similar contrast.

10.7. John told Harry to say it angrily.

10.8. John angrily told Harry to say it.

Angrily may refer to Harry in 10.7, but not in 10.8, where it goes with the main clause and by the referral constraint can refer only to John.

Let us now examine some more interesting cases of the adverb referral constraint--cases where the adverb of the noun phrase to which it refers are in the same superficial clause, but are from different clauses in underlying structure. Simple noun phrase subjects of prove to, turn out to, and grow to are from lower sentences; they are moved into subject position by subject-raising (see Rosenbaum, 1967). The adverb referral constraint thus accounts for the unacceptability of 10.9 - 10.11.

10.9. *The forest greenly proved to be the best investment.

10.10. *John redly turned out to love asparagus.

10.11. *John palely grew to hate his sister.

The adverbs in 10.9 - 10.11 are in second position and are in the main clauses in underlying structure. Since the superficial subjects are the only noun phrases to which the adverbs could refer, and since these subjects are from lower clauses, the underlying structures of 10.9 - 10.11 violate the adverb referral constraint.

Notice, however, that an account of the unacceptability of 10.9 - 10.11 based on some verb-adverb constraint is unlikely to be correct. Adverbs which do not refer to noun phrases may occur in sentences corresponding to 10.9 - 10.11:

10.12. The forest gradually proved to be the best investment.

10.13. John suddenly turned out to love asparagus.

10.14. John slowly grew to hate his sister.

The behavior of adverbs in construction with begin is slightly more complicated. When begin takes a sentential object, its subject may be its deep subject or may come from the sentential object by subject-raising (see Chapter Three and Perlmutter, 1968). The like-subject requirement (Chapter Six) is called into play when begin has a deep subject; the sentential object is required also to have a deep subject (i.e., is required to be agentive). It follows that begin may not have a deep subject (an agent) and at the same time have a sentential object with an anti-agentive verb. We can predict now

that an -ly adverb may not refer to the superficial subject of begin if the verb of the sentential object is anti-agentive. Note the contrast between 10.15 with a pro-agentive verb in the complement, and 10.16 with an anti-agentive verb.

10.15. John { palely / whitely / redly } began to berate Mary.

10.16. *John { palely / whitely / redly } began to have doubts.

If the subject of begin is inanimate, it cannot be an agent and must come from the sentential object; this, together with the adverb referral constraint, accounts for the unacceptability of 10.17.

10.17. *The butter was { runnily / yellowly / softly / greasily } beginning to seem more rancid.

As in the previous case, adverbs which do not refer to noun phrases may occur in sentences whose subjects come from lower clauses:

10.18. John { suddenly / gradually / slowly } began to have doubts.

10.19. The butter was { suddenly / gradually / slowly } beginning to seem more rancid.

There is an additional prediction that the adverb referral constraint allows us to make. A sentence with begin which may be either agentive or non-agentive will be disambiguated by the addition of an adverb referring to its subject. The ambiguity of 10.20 was noted above in Chapter Three; 10.21 is unambiguously agentive.

10.20. John began to run across the pavement.

10.21. John { redly / whitely } began to run across the pavement.

I have given some evidence for the adverb referral constraint; we can now use this constraint to show that the non-agent subjects of indirect causatives come from lower sentences, but that agent subjects of direct causatives do not come from lower sentences. If we consider only sentences with the causative verbs that take causative by-clauses, there are at least three factors which require an indirect, non-agentive reading. First, when the subject is inanimate it cannot be an agent and must come from a by-clause. This predicts the difference in acceptability between 10.22 and 10.23.

10.22. John whitely prevented us from sitting down.

10.23. *The snow whitely prevented us from sitting down.

Secondly, the presence of a causative by-clause with an anti-agentive verb phrase indicates that the main sentence has no deep subject. If there were a deep subject, the by-clause would violate the like-subject requirement. Consequently an adverb may not refer to the main subject when the by-clause has an anti-agentive verb.

10.24. John palely prevented us from sitting down by moving the chair.

10.25. *John palely prevented us from sitting down by falling asleep on the chair.

Third, the causative verb may be anti-agentive, hence the unacceptability of 10.26.

10.26. *John redly gave Mary an urge to vomit.

In addition, the adverb referral constraint correctly predicts 10.24 above to be unambiguously agentive.

The evidence presented above supports the analysis of indirect causatives given in Chapter Eight. The fact that adverbs may refer to agent subjects supports the claim that agents are the only deep subjects, but only in the narrowly restricted domain of sentences with verbs that take causative by-clauses.

CHAPTER ELEVEN

CROSSOVER EVIDENCE

In his study "The Crossover Principle" (1968), Paul Postal propos a constraint on the movement of noun phrases by transformation. The constraint is that in certain circumstances (the details of which I will not go into) a noun phrase cannot be moved over a noun phrase presupposed to be coreferential with it. The evidence is provided by examples like 11.1, which is not acceptable providing the reflexive has no special emphasis or stress. (If there is stress, the coreferentiality is asserted, not presupposed.)

11.1. ?John was killed by himself.

The passive transformation in the derivation of 11.1 would involve moving John across coreferential John; thus the crossover constraint accounts for the unacceptability of this sort of sentence.

Now it turns out that in most cases the superficial subject of an indirect causative cannot be coreferential with a constituent of the verb phrase, whereas an agent subject of a direct causative can be followed by such a coreferential element. Granted the crossover constraint, we must assume that the non-agent subject of indirect causatives have been moved into subject position across the elements of the verb phrase. It follows that these non-agent subjects are not

deep subjects; as it also follows that agent subjects do not move across elements of the verb phrase, and so may well be deep subjects (although, so far as this evidence goes, agents could just as well come from immediately after the verb). This, then, is the argument. The rest of the chapter will be devoted to establishing the fact on which it is based and to pointing out the inevitable exceptions.

Consider the contrast in acceptability between 11.2 and 11.3.

11.2. John frightened Mary himself.

11.3. *The mountain frightened Mary itself.

In 11.3, the mountain, being inanimate, cannot be an agent; frighten takes a causative by-clause, and consequently a non-agent subject of frighten must come from a by-clause. Since this type of reflexive precedes a by-clause, the mountain must have moved over itself in the derivation of 11.3. In this particular example, the by-clause is unspecified except for its subject and has been deleted. Strictly speaking one step of this reasoning does not follow; it cannot be established certainly that causative by-clauses come after this kind of reflexive, since they do not co-occur with it. But it is a plausible conjecture that a causative by-clause would come after the reflexive. because this is the position of method by-clauses:

11.4. John ate the fish himself by using a trowel.

In 11.2, however, John is an agent and no crossover violation is produced. Moreover 11.2 is unambiguously agentive; without the reflexive it would be ambiguous.

Another fact about this sort of reflexive that can now be

explained is the incompatibility of such a reflexive with a by-clause that has an anti-agentive verb:

11.5. John frightened Mary by casting a shadow.

11.6. John frightened Mary himself by throwing a pebble.

but 11.7. *John frightened Mary himself by casting a shadow.

The anti-agentive verbal phrase cast a shadow in 11.7 means that the by-clause cannot have a deep subject and therefore cannot meet the deep like-subject requirement that would be called into play if frighten had a deep subject. John must therefore be in its surface position by virtue of subject-raising and must have moved across himself.

Similarly an anti-agentive main verb that takes a causative by-clause is incompatible with this particular reflexive, whether or not the by-clause appears on the surface:

11.8. *John necessitated our departure himself.

11.9. *John gave Mary a strange urge himself.

11.10. *John amazed Mary himself.

The next case to consider is that of a direct object coreferential with the subject. Compare 11.11 - 11.12, which are paraphrases, with 11.13 - 11.14.

11.11. The iron's becoming incorporated into it caused the crystal to become opaque.

= 11.12. The iron caused the crystal to become opaque by becoming incorporated into it.

11.13. The crystal's incorporating iron caused it to become opaque.

11.14. *The crystal caused itself to become opaque by incorporating iron.

Similar examples are 11.15 - 11.22.

11.15. The tube's developing a short caused the radio to use too much current.

= 11.16. The tube caused the radio to use too much current by developing a short.

11.17. The radio's developing a short caused it to use too much current.

11.18. *The radio caused itself to use too much current by developing a short.

11.19. The vegetation's growing profusely prevented the soil from eroding.

= 11.20. The vegetation prevented the soil from eroding by growing profusely.

11.21. The soil's acquiring a layer of vegetation prevented it from eroding.

11.22. *The soil prevented itself from eroding by acquiring a layer of vegetation.

Thus indirect causative verbs cannot be followed by itself because of the crossover constraint. It might seem that 11.13, 11.17 and 11.21 should also involve a crossover violation; but in these cases where the whole by-clause becomes subject, it is not the coreferential noun phrase specifically that is being moved, but a constituent containing it. As Ross (1967) has shown, crossover violations do not occur in this situation.

Just as in the first case considered, when subject and object are coreferential, a non-agentive by-clause is impossible (11.23), and a normally ambiguous sentence becomes unambiguously agentive (11.24).

11.23. *John caused himself to fall down by having slippery shoes.

11.24. John caused himself to fall down by dropping grease on the floor.

I do not have at hand an anti-agentive indirect causative verb that takes an infinitival complement, but as it happens subjects of gerundive complements work like subjects of infinitival complements even though the subjects do not become constituents of the verb phrase. So necessitate will serve to illustrate that the subject of an anti-agentive verb moves across the object:

11.25. *John necessitated his own departure.

If it is not obvious that sentences like 11.2 and 11.24 are really ambiguously agentive, it should suffice to point out that such sentences cannot occur in anti-agentive contexts:

11.26. John turned out to frighten Mary.

but 11.27. *John turned out to frighten Mary himself.

11.28. John turned out to prevent Mary from committing suicide.

but 11.29. *John turned out to prevent himself from committing suicide.

So far the examples have involved verbs that take abstract objects and by-clauses. Verbs that take an experiencer in addition work the same way:

11.30. John's having his fingers crossed reminded Mary to pick up lettuce.

= 11.31. John reminded Mary to pick up lettuce by having his fingers crossed.

11.32. John's having his fingers crossed reminded him to pick up lettuce.

11.33. *John reminded himself to pick up lettuce by having his fingers crossed.

11.34. John's feeling no pain satisfied the doctors that he was drugged.

= 11.35. John satisfied the doctors that he was drugged by feeling no pain.

11.36. John's feeling no pain satisfied him that he was drugged.

11.37. *John satisfied himself that he was drugged by feeling no pain.

11.38. John's being drunk persuaded Mary to drive home.

= 11.39. John persuaded Mary to drive home by being drunk.

11.40. John's being drunk persuaded him (not) to drive home.

11.41. *John persuaded himself (not) to drive home by being drunk.

11.42. Their coming across their own footprints persuaded the guide that they were lost.

= 11.43. They persuaded the guide that they were lost by coming across their own footprints.

11.44. Their coming across their own footprints persuaded them that they were lost.

11.45. *They persuaded themselves that they were lost by coming across their own footprints.

Such anti-agentive verbs cannot have reflexive objects:

11.46. *John gave himself a strange urge.

The versions with reflexive objects are unambiguously agentive and are rejected in anti-agentive contexts:

11.47. John turned out to persuade Mary that she should drive.

but 11.48. *John turned out to persuade himself that he should drive.

Verbs whose experiencer objects are preceded by <u>to</u> work no

differently:

11.49. John's falling asleep suggested a solution to Mary.

= 11.50. John suggested a solution to Mary by falling asleep.

11.51. John's falling asleep suggested a solution to him.

11.52. *John suggested a solution to himself by falling asleep.

11.53. John's liking fish proved to Mary that George was right.

= 11.54. John proved to Mary that George was right by liking fish.

11.55. John's liking fish proved to him that George was right.

11.56. *John proved to himself that George was right by liking fish.

However verbs that take only an experiencer and a by-clause do not seem to come up to expectation. It has been claimed that psych verbs do not take reflexive objects (Postal, 1968), but I find 11.57 acceptable provided they are construed non-agentively. That is, the relation of agentiveness with the coreferentiality of subject and object is just the opposite of what I would predict.

11.57. John { annoyed / frightened / pleased / terrified } himself.

Some of the anti-agentive anthropomorphic psych verbs do produce violations:

11.58. *John { flabbergasted / gratified } himself.

I cannot account for the anomaly of 11.57.

Complex indirect causatives that take sentential objects whose

subjects may be raised into the verb phrase, like prove, show, demonstrate, are exceptions. 11.59 is either agentive or non-agentive, and 11.60 is acceptable.

11.59. John proved himself to be the right man.

11.60. John proved himself to be the rightful heir by disliking fish.

But a noun phrase coreferential with the main subject that is inside a sentential object never produces a crossover violation:

11.61. John persuaded Mary that he (John) was the heir by disliking fish.

11.62. John proved to them that he (John) was a doctor by having a black bag.

I suppose that the that-clause somehow protects its noun phrases from producing crossover violations. If the infinitival complements in 11.59 - 11.60 are from that-clauses and if raising the subject from the by-clause takes place before the that-clauses are converted to infinitives, then one accounts for the exceptional nature of 11.59 - 11.60.

I am quite sure that many people will disagree with the preceding examples in some measure. I hope that most will at least agree that the crossover violations I claim exist produce a contrast in acceptability.

Cases where inanimate subjects of causatives allow reflexives after the causative are 11.63 - 11.65.

11.63. The meteorite embedded itself in the hillside.

11.64. Work increases itself to fill the time available.

11.65. The cyclone exhausted itself on the shores of Maine.

Such examples force me to choose between rejecting the crossover argument for getting non-agent subjects of true causatives from the right of the causatives' object complements or else accepting a notion of agent which does not require intention or animacy. As one might expect, I will choose the latter course. There is another reason for counting some inanimates as agents. The sorts of subjects that are allowed in constructions like 11.63 - 11.65 are typically natural forces or machines. This sort of subject may also occur as the subject of a change-of-state verb, as in 11.66.

11.66. The cyclone broke the window.

Fillmore has proposed that (physical) change-of-state verbs take either instruments or agents as subjects. (Object subjects obviously do not come into question here.) In 11.66, the subject is obviously not an instrument, so it must be an agent. In addition, such subjects occur in the object complement of succeed in, which otherwise requires an object complement with an agent or experiencer subject:

11.67. The meteorite succeeded in embedding itself in the hillside.

11.68. The cyclone succeeded in destroying a lot of property.

but 11.69. ?The hammer succeeded in breaking the window.

11.70. ?The waxed floor succeeded in making Mary slip.

CHAPTER TWELVE

AGENTS AND CAUSATIVES

Most linguists would agree that one criterion for a good syntactic analysis is that it provide some semantic elucidation. The proposal that agents are deep subjects makes no obvious gain in this regard; making agents deep subjects tells us no more about their meaning than does providing agents with the label 'Agent' in underlying structures. Here I will consider several possibilities for syntactic reconstructions of semantic properties of agents.

As a preliminary, consider Fillmore's definition of the agentive case quoted above in Chapter One: "...the case of the typically animate perceived instigator of the action identified by the verb" (Fillmore, 1968, p. 24). One way to approach the analysis of such a definition is to regard the terms as linguistic rather than as metalinguistic. Taking this approach, we might find that a property of the English verb instigate tells us in part why Fillmore's definition seems appropriate; instigate requires an agent subject.

Another semantic property of agents has to do with intention. I suggested in Chapter One that an agent is a noun phrase whose referent is not presupposed not to have intention. But if a noun phrase in a sentence may not be referred to by an adverb of intention (e.g. intentionally), then surely its referent is presupposed by the

sentence not to have intention. This semantic property will therefore have a syntactic reconstruction if it can be shown that adverbs of intention must refer to subjects in underlying structure. Although at present I do not know how to show this in general, it does not seem to me to be an unreasonable view. The special case in which the verb may take a causative by-clause was discussed in Chapter Ten.

Agents have the semantic property of "independent action". Most agentive sentences assert or presuppose that their agents act in a way that could have been avoided. I think there is some prospect of a syntactic account of the "independence" of agents through an appeal to the cross-over constraint. I showed in Chapter Eleven that in some cases reflexives have the effect of requiring agents by virtue of the cross-over constraint. If the word independent could be shown to contain an implicit reflexive, we might be able to explain why it is not inappropriate to assert independence of an agent.

A more direct reconstruction of agentiveness would be provided in a theory which attributed agentiveness to a higher abstract verb. Suppose for the sake of illustration that "John killed Mary" had an underlying structure like 12.1.

12.1. [agentize John [kill Mary]]
S S

It is important to note that although John is not a subject in 12.1, none of the arguments given in this dissertation would rule out 12.1 as a possible underlying structure. My evidence bears only on the underlying left-to-right order of subjects and other superficial

sentence parts. With the possibility of such an abstract representation in mind, consider the following property of agentive sentences. An agentive sentence implies that its agent caused something; somehow implicit in the notion agentiveness is the idea of causation. Perhaps then the abstract verb has something in common with the verb cause. I give below some reasons for connecting agents with cause.

The conclusion of Chapter Nine implies that there are two entirely different environments for by-clauses. Causative by-clauses occur only with the verb cause when it has no agent; method by-clauses occur with many verbs just when they have agents. Yet the two types of by-clauses seem essentially the same. Their position in the sentence is the same; they come at the end. Their superficial appearances differ only in ways that can probably be attributed to the imposition of the deep like-subject requirement. They both display the shallow like-subject requirement. Both are manner adverbs and can be questioned with how. A positive sentence containing either type implies the truth of the sentence within the by-clause.

Considering all these similarities, one would like to talk of by-clauses, without any qualifier. But then it is incredible that by-clauses occur either with agents or with cause unless there is some connection between these environments. The natural conclusion, I think, is that cause always co-occurs with an agent. By-clauses can then be said to occur only as complements of the verb cause. In

addition, it is not unreasonable to think that cause should play a significant role in the explication of what method by-clauses mean.

The adverb indirectly presents a similar case. In final position, indirectly occurs only in indirect causatives and agentives, leading one to suppose a close connection between the two. Also, it is difficult to imagine a satisfactory semantic account of indirectly that would not involve the notion of causation. Again, agentives seem to require cause or a cause-like verb.

The proposal that the antecedent of the deep like-subject requirement is a subject would require the decomposition of many verbs in direct causatives, each presumably into a verb like cause plus other verbs (see Grosu, 1970). One reason for thinking that this proposal might be correct is that the shallow like-subject requirement does seem to have a subject as antecedent, and one would like to identify the deep and the shallow requirements.

Finally, it can be no coincidence that most verbs in indirect causatives also occur in direct causatives, the non-agentive and agentive versions being closely related in meaning. That is, we must account somehow for the phonetic identity of persuade in indirect causatives (from cause to believe or intend) and persuade in direct causatives. If the verbs of direct causatives are decomposable, we can imagine a single lexical rule that substitutes persuade for a cause-like verb plus believe or intend.

In the absence of evidence that the "cause-like verb" of direct

causatives is distinct from cause itself, the conclusion of Chapter Nine contradicts the above considerations. At present I do not consider that there is sufficient evidence for decomposing the verbs of direct causatives. There does, however, seem to be a syntactic as well as a semantic connection between cause and agents.

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